Report on

Tobacco Control in India



Ministry of Health and Family Welfare
Government of India

Edited by
K. Srinath Reddy
Prakash C. Gupta

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Foreword

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J.V.R. Prasada Rao
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Tobacco use is a serious public health challenge in several regions of the world. It has assumed the dimension of an epidemic resulting in enormous disability, disease and death. It is estimated that five million preventable deaths occur every year globally, attributable to tobacco use. At this rate, the number of such deaths is expected to double by 2020. In addition to damage to personal health, tobacco use results in severe societal costs like reduced productivity and health care burden, environmental damage and poverty of the families. The degree of destruction brought to bear upon the individual and society surpasses the returns generated by tobacco production and consumption in terms of revenue and employment.

India has been very conscious of the harmful effects of tobacco use, disease burden and related social and economic costs of health care. Over the period, various administrative measures were taken to prohibit tobacco smoking in public places and regulate the sale of tobacco products and their advertisements. A serious need was felt for framing a comprehensive national legislation on tobacco control, which would ensure uniform and effective enforcement of measures to achieve desired results. After detailed deliberations, the Government of India enacted 'The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003' in May 2003 with a view to protect public health by prohibiting smoking in public places, banning advertisements of the tobacco products, banning sale of tobacco products to minors and near educational institutions, prescribing strong health warnings including pictorial depiction on tobacco products and regulation of tar and nicotine contents of tobacco products.

For any legislation to be successful there is a need for adequate preparedness on the part of civil society, locally and globally, with regard to awareness of the existing problem and acceptance of the necessity for such legal measures. At the global level, India has been a forerunner in the negotiations leading to the Framework Convention on Tobacco Control, which was ratified by India in February 2004. At the domestic level, the State Governments, which are the main implementing agencies, have been advised to enforce the provisions of the tobacco control legislation strictly. As a measure to sensitize members of civil society, policy-makers, parliamentarians, scientific and public health professionals, researchers and the general public, it was necessary to compile basic data and analysis of tobacco use in the country, the extent of disease burden, present status of tobacco control measures, global experience in this field and proposed road map for future course of planning and action. This report 'Tobacco Control in India' has been commissioned with this purpose in view.

This report is a product of the untiring efforts of the editors, Dr K. Srinath Reddy, Dr P.C. Gupta, their research teams and also the valuable contributions made by individual experts. The Centers for Disease Control and Prevention, Atlanta, USA extended all technical support during the entire period of report development. This publication, I am confident, will fulfil its purpose of raising the awareness among policy-makers, experts, activists and the public at large about the threat of tobacco use and its consequences, which impinges upon the health of the people of India and its economy.

5 November 2004

(J.V.R. Prasada Rao)

Preface

This report owes its origins to the recent global surge in action against tobacco. As awareness of the dangers posed by tobacco spread, nations across the world resolved to forge a campaign strategy and frame a battle plan to overcome the tobacco threat. India's anti-tobacco law emerged in April 2003, close to the closure of the intergovernmental negotiations on the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) in March 2003. Soon thereafter, the Ministry of Health and Family Welfare, Government of India (MOHFW), decided to commission a detailed review of the status of tobacco control in India. This was intended to collate the Indian experience and craft a plan for future action based on a critical appraisal of global evidence and India's specific needs.

The series of scientific reports published by the Surgeon General of the United States of America have served, over the years, as the best sources of evidence-based information on the adverse health effects of tobacco use and a resource for the best practices for tobacco use, prevention and control. The collaboration of the US Centers for Disease Control and Prevention (CDC) was, therefore, welcomed by MOHFW for the purpose of providing technical support to the development of this report.

In order to engage the expertise and the energy of a wide range of experts, public health advocates and civil society representatives, MOHFW invited two Indian agencies which have been actively contributing to knowledge acquisition and public health action on issues relevant to tobacco control. As their representatives, we were given the privilege of compiling and editing this report.

We undertook this task by inviting several Indian contributors, with specific expertise in different areas related to tobacco control, to contribute (individually and jointly) to different sections of defined chapters. Their manuscripts were extensively reviewed by other Indian and international experts and were later edited and integrated by us to form the text of this report. In undertaking the major task of bringing this report together, we were guided by an advisory group of public health experts from India and the United States. It is an interesting coincidence that the thread of history which originally brought tobacco to India from the Americas had now knit together public health experts from the two countries into a combined effort to advance the agenda of tobacco control and promote public health in India. The potential impact of such an undertaking ensures that children are protected from the social and cultural influences that lead to tobacco addiction, that all tobacco users are encouraged to quit, and that non-smokers are protected from second-hand smoke.

This report provides a major source in our national efforts to prevent and control tobacco use. It is also intended to inform and assist many sections of our society who are committed to protecting India's national interests by preserving and promoting the health of our people. Since several of such readers will not be health professionals, an attempt has been made to keep the language as free from technical jargon as possible. Most of the readers will know that tobacco is harmful but not how harmful. We hope this report will inform them. Many of our readers will want to control tobacco but not know how best to do it. We hope this report will aid them. Above all, we hope this report will provide policy-makers the necessary impetus to initiate and implement a coordinated comprehensive national strategy for tobacco control.

15 November 2004

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Glossary

AAR	Age adjusted rate (age standardized rate) is a rate, such as incidence rate or mortality rate, weighted by age-specific distribution of a standard population. For international comparison of cancer incidence rates, generally a standard world population is used.
Areca nut	Areca nut is obtained from the fruit of the *Areca catechu* tree. The outer pericarp of the ripe fruit, which is orange-yellow, is removed to separate the nut, which is used fresh in Kerala, Karnataka, West Bengal and Assam, and after sun-drying, curing or baking elsewhere in India.
ASR	Age-specific rate is the rate of disease or other health outcome in a population of a specific age group (such as 40–50 years).
Beedis	It is made by rolling a dried, rectangular piece of temburni leaf (*Diospyros melanoxylon*) with 0.15–0.25 g of sun-dried, flaked tobacco into a conical shape and securing the roll with a thread.
Betel leaves	Betel leaves are an indispensable part of *paan*. The betel vine is a creeper, and it is often grown next to areca-nut trees, which provide support, or on wooden scaffoldings.
Bhang	Indian hemp
CAD/CHD	Coronary artery disease or coronary heart disease involves narrowing of arteries supplying the heart muscles due to fatty deposits (atherosclerosis) in the coronary arteries.
Catechu	It is the residue of a hot water extraction of the heartwood of the *Acacia catechu* or *A. suma* tree.
Cheroot	It is like a cigar with two closed ends.
Chillum	The *chillum* is a straight, conical pipe made of clay, 10–14 cm long.
Chunam	Lime or calcium oxide
Chutta	A hand-rolled cigar smoked in reverse with the lit end inside the mouth. The name *chutta* in Telugu (spoken in Andhra Pradesh) may have come from the Tamil (spoken in Tamil Nadu) word *shruttu*, meaning 'to roll'.
Commissure	The junction of the upper and lower lip on either side of the mouth.
Confidence interval	The range of possible values within which true population value could lie with a known degree of probability.
COPD/ COLD	Chronic obstructive pulmonary disease or chronic obstructive lung disease is a group of lung diseases involving limited airflow and varying degrees of air sac enlargement, airway inflammation and lung tissue destruction.
DALY	Disability-adjusted life-years is a measure of the burden of disease; it reflects the total amount of healthy life lost from premature mortality or from some degree of disability during a period of time.

Dhumti	It is a kind of a conical cigar made by rolling tobacco in the leaf of a jack-fruit tree (*Artocarpus integrefolia* L.), occasionally in a dried leaf of a banana plant (*Musa paradisiaca* L.) or in the green leaf of a *hansali* plant (*Grewia microcos* L.).
DSDR	Disease-specific death rate is the rate of death among the population having a particular disease.
ETS	Environmental tobacco smoke (second-hand smoke) is a complex mixture of chemical constituents and particulates released into the atmosphere from the burning tip of a cigarette, pipe or cigar including the smoke exhaled by the smoker.
Exposure	In this document 'exposure' refers to tobacco use, passive smoking or skin contact with green tobacco.
Fauces	The passage between the back of the mouth and the pharynx.
Gingiva	The 'gums' surrounding the teeth.
Hookah	Hubble–bubble or narghile. *Hookah* is written as *hukka* as well. *Hookah* has been used uniformily unless where anecdotes and historical records are mentioned. The *hookah* is an Indian water pipe.
Hookli	The stem is 7–10 cm long, with a mouthpiece; sometimes, a wooden stem is used, with a detachable clay bowl, presumably to reduce the heat.
Incidence	The number of new cases of disease in a specified population within a specified time period.
Jangamas	Female wandering mendicants of Hindu religion.
Jogis	Male wandering mendicants of Hindu religion.
Life expectancy	Life expectancy is the expected value of the lifetime of an individual in a given group at birth.
Mawa	Some 5–6 g of areca nut shavings are placed on the cellophane and about 0.3 g of tobacco are added; a few drops of watery slaked lime are sprinkled over this, and the contents are tied with a thread into a ball.
Mortality (rate)	The death rate in a population. The ratio of the number of deaths to the population at risk of dying.
Paan	Betel quid
PAR	Population-attributable risk is the proportion (%) of a disease in the population attributable to a specific exposure (e.g. chewing tobacco).
Prevalence	The term prevalence refers to the number of existing cases of a disease or condition in a population at some designated point of time or period of time.
Risk factor	An aspect of personal behaviour or lifestyle, an environmental exposure, or an inborn or inherited characteristic that is associated with an increased rate of a subsequently occurring disease or condition.
Slaked lime	Lime is either prepared from sea shells or quarried from limestone ($CaCO_3$).
Tambula	Betel

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1

Introduction

This is not a report about just any crop and just any country. It is a report about tobacco, which is the foremost cause of preventable death in the world today, and India, which is the second-largest country in the world, with a billion plus population. This report is also an examination of the methods and tools available to reduce, prevent and control tobacco use.

The total number of premature deaths caused by tobacco during the twentieth century has been estimated at about 100 million and, if current trends of tobacco use continue during the twenty-first century, the death toll is projected to go up to one billion. The World Health Organization (WHO), which provides these estimates, also predicts that India will have the fastest rate of rise in deaths attributable to tobacco in the first two decades of the twenty-first century. Many of these deaths will occur in the productive years of adult life, as a consequence of an addiction acquired in youth. The compelling need to save many of these lives from falling prey to tobacco use addiction and the urgent imperatives of avoiding the huge health, economic, social and environmental burdens that would be imposed by tobacco on a nation that aspires for accelerated development, form the *raison d'etre* of this report.

Tobacco use causes a wide range of major diseases which impact nearly every organ of the body.[1] These include several types of cancers, heart diseases and lung diseases. Public health researchers have been substantiating these findings and discovering more and more damaging evidence about the disease consequences of tobacco use for over half a century. For a long time, the tobacco industry propounded and

perpetuated the myth that the evidence on the relationship between smoking and ill health was controversial. In recent years, however, many of the tobacco companies have given up that position.

If the evidence is clear that tobacco use is harmful and if the tools to prevent and control its use are available, why is it that tobacco control is challenging? The answer is very complex. There are numerous forces influencing a person's decision to use tobacco, or if that person is a tobacco user, the forces that drive continued use. The most important factor for tobacco use is the totality of industry activity, including advertising and promotion, organizational activity, support for ancillary activity and political action, which maintains the marketability and profitability of the product. Nonetheless, there is cause for optimism based on considerable public support for efforts to prevent and control tobacco use.

According to estimates made by the WHO, currently about 5 million people die prematurely every year in the world due to the use of tobacco, mostly cigarette smoking. These deaths are currently divided somewhat evenly between developed and developing countries. More important is the fact that this epidemic of disease and death caused by tobacco is increasing very rapidly. By 2030, it is estimated that the number of premature deaths attributable to tobacco would double to 10 million deaths every year, with about 7 million of the deaths taking place in developing countries. Among people alive today in the world, about 500 million would die prematurely due to tobacco use; most of these are children and young adults of today.[2]

India's tobacco problem is more complex than probably that of any other country in the world, with a large consequential burden of tobacco-related disease and death.[3] The prevalence of tobacco use among men has been reported to be high (generally exceeding 50%) from almost all parts of India (more in rural than in urban areas). Women from most parts of India report smokeless tobacco use and the prevalence varies between 15% and 60%.[4] Among 13–15-year-old school-going children, the current use of any tobacco product varies from 3.3% in Goa to 62.8% in Nagaland.[5] In the late 1980s, the number of tobacco-attributable deaths in India was estimated as 630,000 per year.[6] On conservative estimates, the tobacco-attributable deaths currently range between 800,000 and 900,000 per year. The cost of the tobacco-attributable burden of just three groups of diseases—cancer, heart disease and lung disease—was estimated as Rs 277.611 billion (US$ 6.5 billion) in 1999.[7] This increased to Rs 308.33 billion (US$ 7.2 billion) in the year 2002–2003.

The most widely prevalent and most studied form of tobacco use globally is cigarette smoking. Cigarettes kill one in two smokers prematurely, half of these deaths occurring during middle age (35–69 years).[8] Assessed in any manner, tobacco use is one of the most alarming health problems facing the world today. Tobacco is a marketed malady and its use is an engineered addiction. The multinational tobacco industry operating at the global level promotes and profits from the deadly tobacco trade. Such a global threat needs a global thrust to counter it.

The WHO used its mandate of proposing international treaties on public health for the first time in its history, by initiating the Framework Convention on Tobacco Control (FCTC). After several years of negotiations in which over a hundred countries participated, the Convention was adopted by the World Health Assembly in May 2003. India was one among the first few countries to sign and ratify the FCTC. India was also among the first countries to enact a strong national law for tobacco control in April 2003.

On the world tobacco map, India occupies a very special place. As the second most populous country in the world, India's share of the global burden of tobacco-induced disease and death is substantial. As the second-largest producer and consumer of tobacco in the world, the complex

interplay of economic interests and public health commitments becomes particularly prominent in the Indian context. There is, therefore, an even greater need to examine the case for a comprehensive tobacco control programme in such a setting.

The global literature is only of limited help in assessing the problem of tobacco use in India, since the dominant and the most researched form of tobacco use globally is cigarette smoking. In India, cigarette smoking comprises a small part of the tobacco smoking problem and a minor part of the overall tobacco problem. The major smoking problem in India is *beedi* smoking, and a large part of the overall tobacco problem is the oral use of smokeless tobacco products. All forms of tobacco use are inferred to be unsafe for human health. Mere extrapolation of the results of tobacco research in developed countries would, therefore, not provide a full picture of the dimensions of the tobacco problem in India. While much of the biological associations between tobacco and disease are applicable across the world, the varied patterns of tobacco use and the diversity of socioeconomic determinants substantially influence the profile of tobacco-related diseases. This requires that the Indian experience be carefully documented and data from research studies conducted in the country be critically appraised.

On a subject such as tobacco control, which arouses passionate and often polarized responses from different segments of society, there is always a defined perspective from which the problem is presented and discussed. This report unequivocally positions its analyses and recommendations from a public health perspective. However, the recognition of the integral links between health and sustainable development, and the organic connections between health and human rights lead to a consideration of the economic, sociocultural, environmental and human rights aspects of tobacco's assault on human health. The multidimensional problem of tobacco and the multisectoral character of tobacco control are described to map the case for early and effective implementation of a national programme for tobacco control.

The purpose of this report is to provide a comprehensive overview of the tobacco problem in India, from public health challenges to policy responses. The objective is to synthesize the available scientific knowledge on tobacco use in India with a view to assessing the magnitude of the problem, the health problems being caused, identifying the gaps in knowledge, reviewing policies and attempts towards reducing the burden of tobacco in India and providing a credible basis for evolving future tobacco control policies.

Structure of the report

The report traces the past, present and future of tobacco control in India, drawing lessons from the global experience where relevant. It is organized in the subsequent nine chapters, which sequentially detail the several facts of tobacco control. Chapter 2 summarizes the historical background of tobacco in India as it affects the problem today. Chapter 3 describes the myriad varieties of tobacco use in India and assesses the extent of their use in various regions and population groups of India. Chapter 4 profiles the health consequences of tobacco use in India and estimates the morbidity and mortality attributable to tobacco use on the basis of available scientific information whenever feasible.

Chapter 5 details the economic costs of tobacco-related diseases and the environmental costs of tobacco production and use. Chapter 6 documents the Indian experiences in the battle for tobacco control thus far. Chapter 7 summarizes the global evidence on the several effective approaches to reducing tobacco use and presents the considerable evidence—as well as the attendant controversies—supporting their application. It delineates the measures, i.e. multifaceted school-based education programmes, community-based campaigns, management

of nicotine addiction, product regulation, enforcement of clean indoor air standards and protecting young people from the supposed attractiveness of cigarettes.

Chapter 8 delineates the measures that need to be taken to attain the objectives of tobacco control in India. Chapter 9 provides a vision for the future, and outlines broad strategies for tobacco control which, if pursued, can have a substantial impact through reductions in the prevalence of tobacco use and its related disease burdens. It also outlines the nature of investments required for accomplishing these goals. Finally, Chapter 10 provides recommendations for action by national stakeholders and international partners.

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2

Historical Overview of Tobacco in India

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2.3 Sociocultural aspects of tobacco use 33

The history of global tobacco trade is integrally linked with the history of India. It was to discover a sea route to this fabled land, reputed for its spices, silk and gems, that Christopher Columbus set sail in 1492. His wayward journey took him instead to America. This 'discovery' of the 'New World' was accompanied by the discovery of tobacco by Portuguese sailors. This plant, treasured by the American 'Indians' for its presumed medicinal and obvious stimulant properties, was eagerly embraced by the Portuguese who then moved it to the 'Old World' of Europe. Even though their quest for easy access to Indian spices was delayed by some years, the Europeans did not fail to recognize the commercial value of this new botanical acquisition.

When the Portuguese eventually did land on India's shores, they brought in tobacco. They introduced it initially in the royal courts where it soon found favour. It became a valuable commodity of barter trade, being used by the Portuguese for purchasing Indian textiles. The taste for tobacco, first acquired by the Indian royals, soon spread to the commoners and, in the seventeenth century, tobacco began to take firm roots in India. Thus, tobacco travelled to the 'real' Indians from their curiously named American cousins, through the medium of European mariners and merchants who sailed the seas and spanned the continents in search of new markets and colonies.

It was with the establishment of British colonial rule, however, that the commercial dimensions of India's tobacco production and consumption

grew to be greatly magnified. Initially, the British traders imported American tobacco into India to finance the purchase of Indian commodities. When the American colonies declared independence in 1776, the British East India Company began growing tobacco in India as a cash crop. Attempts were made, under the colonial rule, both to increase the land under tobacco cultivation and to enhance the quality of the leaves produced. The British East India Company and its successor, the British Raj, used tobacco as an important cash crop, both for domestic consumption and foreign trade. The manufacturing industry was, however, not established till much later, as the British believed in exporting the leaf to Britain and re-importing cigarettes to India, with considerable value addition in the process. As domestic consumption of cigarettes rose, the Imperial Tobacco Company commenced production within India, retaining control and repatriating the profits.

In the late nineteenth century, the *beedi* industry began to grow in India. The oldest *beedi* manufacturing firm was established around 1887 and by 1930 the *beedi* industry had spread across the country. The price differential from cigarettes favoured the use of *beedis* by the working classes and this domestic product soon supplanted cigarettes as the major form of tobacco consumption. The tax policies adopted by the Indian Government after Independence also favoured the *beedi* in comparison to cigarettes. This further fostered a growth in *beedi* consumption.

While tobacco chewing was practised for many centuries, commercial production and marketing have been markedly upscaled recently, with the introduction of the *gutka*. The rate of growth of consumption of *gutka* has overtaken that of smoking forms of tobacco. As a result, oral tobacco consumption has opened a new and broader front in the battle between commercial tobacco and public health in India.

The economics of tobacco, which introduced it into India and entrenched it during the colonial rule, also provided a compelling reason for continued state patronage to the tobacco trade, even in free India. The ready revenues that bolster the annual budgets, the ability to export to a tobacco-hungry world market and the employment opportunities offered to millions provided the rationale for encouraging tobacco, both as a crop and as an industry.

While economics may have been the principal force propelling the seemingly inexorable advance of tobacco in India, there are also a multitude of social and cultural factors which need to be recognized, so that the variations in its use across social, religious and ethnic subgroups can be comprehended. Such factors have operated since the time tobacco entered India, though the nature of the sociocultural determinants that influence individual and community responses to tobacco may have varied over time, region, religious denomination and social class.

It is this tapestry of international linkages, powerful economic factors and distinctive cultural influences which make the history of tobacco in India a fascinating study. This chapter attempts to profile some of these, in a brief narrative. Interested readers are advised to seek more detailed information from the referenced publications, even as they are exhorted to join a collective effort to confine tobacco in India permanently to the pages of history.

2.1

Historical Records and Anecdotes: From the Middle Ages to Modern Times

Origin of the word 'tobacco'

Various theories are related to the origin of the word tobacco, which is thought to be derived from the Arabic word *tabaq*, meaning 'euphoria-producing herb'. It is said that the word tobacco is the Carib word *tabaco* (the name of the pipe in which tobacco was smoked).[1] It is possible that the word tobacco comes from the island of Tobago in the Carribean. Some sources refer to the origin of this word from the Tabasco state in Mexico. The word 'cigare' is derived from the Mayan word *sikar* which means 'to smoke'.[2] According to yet another theory, the word tobacco is derived from a Spanish word *tobaca* which is a Y-shaped instrument used by early American Indians to inhale snuff.[3]

Origin of tobacco

Tobacco appears to be as old as human civilization. Cultivation of the tobacco plant probably dates back 8000 years when two species of the plant, *Nicotiana rustica* and *Nicotiana tabacum*, were dispersed by American Indians through the southern and northern American continent (Box 2.1).[4] Tobacco seeds were discovered in archaeological excavations in Mexico and Peru, and the remains of permanent settlements built around 3500 BC showed that tobacco was an important article to the inhabitants.[4] Tobacco belongs to the family of plants called Solanaceae or the night shade family, which contains about 60 species including potato and the genus *Nicotiana*. *N. rustica*, a mild-flavoured, fast-burning species, was the tobacco originally raised in Virginia, but it is now grown chiefly in Turkey, India and Russia. Both the species of tobacco are annuals. Modern commercial varieties of tobacco have descended directly from *N. tabacum*.[6]

Box 2.1 American Indian myths about the origin of tobacco

One American Indian myth links the origin of man with that of the tobacco leaf:[1]

'When the Great Spirit made the spirits of nature and the spirit ancestors of birds and animals, he conferred upon each a special power. Man he created last of all, but then found he had already given away every power, and there was nothing left to bestow upon this miserably weak, unendowed creature. So for man, the Great Spirit made a special plant: tobacco. At the first smell of it, the other spirits were filled with an insatiable craving for its fragrance. One by one, each petitioned to exchange his power for that of the new plant. The Great Spirit refused them all, saying that he too craved it, but that the gift was man's and he was henceforth free to share the plant with other spirits or to withhold it from them as he chose. And so, ever since, humans have appeased the spirits and obtained their help by leaving offerings of the leaf buried in the ground, by casting it in the air or into lakes and rivers, and most important, by burning it in the ceremonial pipe bowl.'

The Huron tribe has a beautiful legend about the genesis of tobacco.[5]

'A long time ago the soil was infertile and people were starving badly. Then the Holy Spirit sent a woman to earth to save the mankind. As she walked along the planet, every time her right hand touched the soil immediately potato would grow; if she touched the soil with her left hand then maize would appear. And, finally, when the world saw abundance of everything, the woman stopped walking to take rest. Later, tobacco began to grow on the very spot where she rested.'

Variations in the use of tobacco

Historians believe that native Americans began using tobacco for medicinal and ceremonial purposes before 1 BC. First pictorial records of tobacco being smoked have been found on Guatemalan pottery. The documentation of the practice of inhaling the smoke of dried tobacco plants is available from the Mayan culture as early as the sixth century.[7]

Modern documented evidence of tobacco use has been available since the end of the fifteenth century. In 1449, Indians on Margarita Island, off the coast of Venezuela, were observed chewing a green herb which was carried in a gourd around their necks. It was assumed that the green herb, known as tobacco, was chewed to quench thirst.[4]

When Christopher Columbus landed in America on 11 October 1492, he was offered golden tobacco leaves but he threw them away. His crew members saw the natives smoking hand-rolled dried leaves and were intrigued by it. They became the first Europeans to witness the curious habit of smoking tobacco.[8] In 1493, Ramon Pane, who accompanied Columbus on his second voyage, described the habit of Indians taking snuff through a Y-shaped tube. Pane is credited for being the first person to introduce tobacco seeds into Europe.[7]

Tobacco chewing appears to be widespread in the late 1500s in parts of southern America. Tobacco smoking was also popular in the 1500s. Columbus observed American Indians smoking thick bundles of twisted tobacco leaves wrapped in dried palm or maize leaves.[4]

Inhaling of powdered tobacco (snuff) seems to have come into vogue much later. Snuff was prepared by grinding tobacco leaves into a powder with a block and pestle made of rosewood. The Indians of Brazil were perhaps the first to use snuff. In Haiti, it was used as a medicine for cleaning nasal passages and as an analgesic. By the year 1519, Mexican Indians were known to have used tobacco powder to heal burns and wounds. They also inhaled powdered tobacco through a hollow Y-shaped piece of cone or pipe called *tobago* or *tobaca*.[4]

The journey of tobacco to Spain is believed to have been made through Columbus's crew, who carried tobacco plants and seeds with them and introduced its cultivation in Spain.[2] In 1558, Philip II of Spain sent Francisco Fernandes to Mexico. When he returned to Spain, Fernandes brought the tobacco plant.[9]

Oviedo, the leader of the Spanish expedition to Mexico, described what we know as a cigarette: 'A little hollow tube, burning at one end, made in such a manner that after being lighted they burn themselves without causing a flame.' He is thought to have brought tobacco leaves back to Spain in 1519.[8]

Jean Nicot was instrumental in introducing tobacco into Europe. He was the French ambassador in Portugal, who first introduced tobacco to the French Court in the beginning of the sixteenth century. The queen of France, Catherine de Medici, was suffering from strong migraines, which Jean Nicot cured by making her use powdered tobacco. This greatly enhanced his prestige. The tobacco plant thus got its generic name, *Nicotiana* after Jean Nicot.

In 1556, Andre Thevet initiated the cultivation of tobacco in Europe. The Europeans on account of their travels rapidly spread tobacco across Asia. Nicholas Monardes, a sixteenth century physician describes that Indian priests answered the queries of their patients by means of a tobacco-induced trance. After inhaling tobacco, the priest 'fell downe uppon the grounde, as a dedde manne, and remaining so, according to the quantitie of the smoke that he had taken, and when the hearbe had doen his woorke, he did revive and awake, and gave them their answers, according to the visions, and illusions whiche he sawe'.[8]

Tobacco smoking had become a popular leisure activity in Europe during the early seventeenth century. The term 'to smoke' was introduced during the late seventeenth century. Till then one 'drank' tobacco smoke, generally through a pipe.[10] Though the tobacco plant came to Europe through Spain, smoking as a habit became popular in the continent from England. Ralph Lane, the first Governor of Virginia and Sir Francis Drake were instrumental in bringing the habit of smoking to the notice of Sir Walter Raleigh. A tremendous fillip was given to this habit due to the influence and patronage of such a man as Sir Walter Raleigh.[9]

One popular story about Raleigh is that of a servant who found Raleigh smoking. Thinking that his master was on fire, the servant drenched him with beer. Raleigh has been regarded as the patron saint of smoking. Though he did not introduce the plant, he perfected a method of curing the leaf, which helped in popularizing smoking among the courtiers of his time.[11] During the seventeenth century, indulgence in tobacco spread rapidly across all nations.

All early explorers widely reported that in native American culture, women used little or no tobacco. The rare images of the seventeenth and eighteenth centuries which depicted a European woman with a pipe tended to portray her as sexually promiscuous or otherwise disreputable.[12] During the 1800s in France, 'Lorettes' prostitutes were the first women to smoke publicly near the Notre Dame de Lorettes Church.[13]

Within 150 years of Columbus's finding strange leaves in the New World in the late fifteenth century, the use of tobacco became pervasive worldwide. Its rapid spread and widespread acceptance characterize the addiction elicited by it. Tobacco was initially smoked from a tube or clay pipe. This form of smoking was followed by cigars and primitive cigarettes made by stuffing tobacco in a hollow cane tube, or by rolling crushed tobacco leaves in corn husk or other vegetable material.[6] In 1499, Amerigo Vespucci reported American Indians chewing tobacco leaves along with a white powder.[14]

Introduction of tobacco into India

Tobacco was introduced into India by Portuguese traders during AD 1600. Its use and production proliferated to such a great extent that today India is the second largest producer of tobacco in the world. Soon after its introduction, it became a valuable commodity of barter trade in India. Trade expanded and tobacco spread rapidly along the Portuguese trade routes in the East, via Africa to India, Malaysia, Japan and China. During this period, the habit of smoking spread across several South Asian countries. Virtually every household in the Portuguese colonies took up the newly introduced habits of smoking and chewing tobacco. Cochin and Goa, on the West Coast of India, and Machilipatnam along the East Coast, were the main ports for Portuguese trade.[15]

Tobacco was first introduced in the kingdom of Adil Shahi, the capital city of Bijapur, presently in Karnataka in south India, along the trading route of the Portuguese. Asad Beg, ambassador of the Mughal Emperor Akbar, visited Bijapur during 1604–1605 and took back large quantities of tobacco from Bijapur to the Mughal Kingdom in the north and presented some to Akbar along with jewel-encrusted European-style pipes. Several nobles in Akbar's court were also given tobacco and pipes, and tobacco was appreciated by everyone. The presentation of this herb to the emperor was discussed animatedly in the court of Akbar.[16]

About his visit to the court of Akbar, Asad Beg writes: 'His Majesty [Akbar] was enjoying himself after receiving my presents; and asking me how I had collected so many strange things in so short a time. When his eye fell upon the tray with the pipe and its appurtenances he expressed great surprise and examined the tobacco, which was made up in pipefuls; he inquired what it was and where I got it. The Nawab Khan-i-Azam replied: "This is tobacco, which is well-known in Mecca and Medina, and this doctor has brought it as a medicine for your Majesty." His Majesty looked at it and ordered me to prepare and take him a pipeful. He began to smoke it, when his physician approached and forbade his doing so ... As I had brought a large supply of tobacco and pipes I sent some to several of the nobles, while others sent to ask for some; indeed all, without exception, wanted some, and the practice was introduced. After that the merchants began to sell it, so the custom of smoking spread rapidly.'[9]

Many courtiers objected to the smoking of the foreign leaf, as they thought it could be harmful. A pro-tobacco nobleman countered this concern,

stating to the emperor that objections from commoners to anything new are universal. Such an objection lack a basis of knowledge and are, therefore, not rationally defensible and that European rulers and aristocrats included many wise men and such men would not smoke tobacco if tobacco was not good.[17]

In the *Subhasitaratnabhandagara*, the seven Sanskrit verses of unknown date and authorship, the use of tobacco is mentioned. These are thought to be written at the time when tobacco use became extremely popular in India.[9] The following verses provide some details about tobacco use:

Verse 2:

दारिद्रयशीलोऽपि नरस्तामाखुं नैव मुश्रति।
निवारितैंऽपि मार्जारस्तमाखुं नैव मुश्रति।।२।।

Even a cat that is being driven away, never leaves a mouse; similarly, howsoever poor a man may be, he does not leave the use of tobacco.

Verse 4:

'श कतमाखुचूर्ण' Dried powder of tobacco leaves was used for smoking and chewing.

'सुधया अशन' The habit of chewing tobacco powder mixed with *chunam* had became common.

Reddening 'रागिता' of the mouth was caused by chewing tobacco mixed with *chunam* (सुधा).

The users of पर्ण (betel leaf) and betel nut (पूग) with सार (खदिरसार), i.e. powdered catechu, also used to chew the tobacco powder in combination with these ingredients of *tambula* (betel).

Multicultural diffusion of tobacco

Tobacco could successfully seep through the diaphanous cultural membranes in many continents. This was facilitated by the medicinal properties attributed to tobacco, its ability to suppress hunger and provide mild intoxication, and its easy assimilation into cultural rituals.[18] The versatility in the methods of using tobacco made it popular across the globe and enabled its use and acceptability in various sociocultural contexts around the world. Tobacco was often used to avert hunger during travel and sustain long hours of work.[15]

Tobacco smoking became widespread throughout Asia. The intake of snuff prevailed in China, while tobacco chewing predominated in India. The use of pipe was popular in Africa. In India, tobacco was chewed along with betel and was offered to guests.[18] Thus, tobacco also became a facilitator of social interaction.

Promotion of tobacco as a medicinal plant across the world

Among the South American Indians, tobacco was perceived to have an essential sacred function as a 'supernatural, purifying, mortifying and revitalizing agent during life crises ceremonies'.[19] It was used by shamans, in combination with other drugs, to induce narcotic or psychotropic trances as a means to enter the metaphysical plane.

With the use of tobacco in different parts of the world, began the controversy about whether it was good to smoke tobacco. There was a coterie of physicians who promoted tobacco as a medicinal plant. In the sixteenth century a leading physician of Seville, Nicolas Monardes, reported the medicinal properties of tobacco, identifying 25 ailments that tobacco could 'cure'—ranging from toothache to cancer.[18] During the seventeenth century, one authority advised a pregnant woman to refrain from consuming tobacco, while another strongly recommended it as beneficial for the growth of the foetus.[18]

In the sixteenth century, the European and Asian systems of medicine were based on the notion of balance. According to the European humoral system of medicine, the human body consisted of a combination of four opposing qualities, i.e hot and cold, moist and dry. All diseases were believed to be caused due to

imbalances, e.g. excess heat and excess moisture. Tobacco was attributed to have hot and dry properties and was believed to have the power to expel excess moisture from the body. According to this theory, old people were advised not to smoke as ageing was understood to be a process of the body drying up. The Chinese Yang–Yin (hot–cold) medical system also classified tobacco to be having similar medicinal properties and effects on body. Interesting accounts exist of tobacco users remaining unaffected by malaria, while non-users succumbed to the illness in the Yuan Province.[18]

Medicinal attributes of tobacco in medieval India

Contrary to the Chinese and European systems, the Indian system of Ayurveda, also based on the concept of hot and cold, and of balance, never formally recommended the medicinal use of tobacco.[18] Inhaling and smoking of aromatic herbs was practised in India in as early as the seventh century. Thus, when tobacco was introduced as a smoking substance, it was naturally considered a medicinal herb but was not recommended by Ayurveda. However, the belief that smokeless tobacco has a protective effect on teeth and is a pain killer is widely prevalent in many parts of rural India. Use of tobacco products as a dentifrice among adolescents in India has recently been reported, highlighting the continuation of the misconception till date.[20] Thus, due to different groups ascribing special virtues to tobacco, within a short period, it developed firm roots in the sociocultural milieu of the country. Although initially tobacco was only smoked, with time, diverse methods of smoking and chewing tobacco were devised.

A description of the tobacco plant, its 'medicinal' values and adverse effects is found in *Yogaratnakara*, a medical compendium composed between AD 1625 and AD 1750, which is one of the classic works in the Sanskrit literature published by Anandashrama, Pune in 1900. This text refers to tobacco as a smoking plant having medicinal properties. It is said to facilitate smooth intestinal functioning and motion, prevent toothache by killing germs, cure itching on the skin, control wind in the body, and is also said to be useful in the treatment of scorpion bites. It is worth noting that even now, in some rural areas of India, people use tobacco for these purposes. On the other hand, notable adverse effects of tobacco use are also indicated in this work such as 'giddiness, weakening in eyesight, and making semen less virile'.[21]

Progression of tobacco smoking in India

A Persian author's extract lists some details of the progression of tobacco use and cultivation in India during the seventeenth century.[9] Some pertinent points from this extract are given below.

1. Tobacco is referred to as an 'European plant'.
2. Its cultivation became speedily universal.
3. It 'rewarded the cultivator far beyond every other article of husbandry'.
4. Smoking of tobacco pervaded all ranks and classes during the reign of Shah Jahan (AD 1628–1658). Tobacco was often preferred over other necessities of life.
5. References were made to the use of *chillum* and *hookah*.

John Freyer in his travels during AD 1672–1681 in East India refers to the tobacco consuming habits of Moors in India, and remarks: 'Their Chiefest Delight and Pride is to be seen smoking tobacco cross-legg'd in a great chair at their doors, out of a long Brass Pipe adapted to a large Crystal Hubble–bubble fixed in a Brass Frame, their Menial Servants surrounding them.'[9]

Due to the widespread use of the *hookah*, it soon became a general article of gift during the seventeenth century. *Hookah* is mentioned as one of the gift items listed in the things to be presented to the Faujdar of Hugli, dated 3 April 1682.[9]

Origin and popularity of the hookah

The origin of the *hookah* corresponds to the introduction of tobacco into India. When Emperor Akbar received the gift of tobacco and a pipe from a Portuguese ambassador, he took a few puffs out of curiosity and courtesy. The appreciation of tobacco smoke in the court of Akbar was objected to strongly by his royal physician, who forbade him to inhale the smoke, since he was concerned about the ill effects of smoking.[22] Hakim Abul Fath, the Sadr-i-Jahan (chief justice and administrator) in Akbar's court, opposed the circulation of tobacco but Akbar permitted it. A compromise was reached wherein Hakim Abul Fath suggested a remedy to mitigate the pernicious effect of tobacco on health. He advised that tobacco smoke should be first passed through water for purification. This led to the creation of the *hookah* ('hubble–bubble' or narghile), which became the prevalent form of smoking in the country.[22] Indian men and women smoked *hookahs*, wherein flavoured tobacco was used. Tobacco was flavoured with molasses and kept alight with burning charcoal, the smoke passing through a water bowl to cool and filter it.

It is noteworthy that Hakim Abul Fath sought a 'remedy' to counteract the harmful health effects of tobacco soon after its introduction, though the Europeans did not devise any measures to check the harmful effects of tobacco.[22] However, passing tobacco smoke through water only filters suspended particles and in no way reduces the dangerous effects of tobacco smoke on the human body.

Due to its origin and its patronage by Mughal rulers, *hookah* became popular in those parts of India where the Mughals had a strong influence. *Hookah* was popular among men and women of aristocratic and elite classes, especially in north India. As a result, *hookah* smoking became a part of the culture, and sharing of a *hookah* became socially acceptable and got associated with brotherhood and a sign of conveying equality.[23]

Under the Mughal reign, ornamental *hookah* became a status symbol, and a wide variety of



Fig. 2.1 An East India Company painting of a bibi (woman) sitting on a western chair, contentedly smoking a *hookah*[24]

hookahs were available. The type of *hookah* ranged from those made of engraved silver, brass and other precious materials, and decorated with enamel or jewels for the upper class, to wooden or coconut shell for the lower class.

Paintings of the Mughal period show both men and women smoking *hookahs* (Fig. 2.1).[23,24] After its origin in Bihar, the *hookah* became even more popular and its manufacture spread to other parts of India in 1905.

A dictionary of Urdu, classical Hindi and English written by J.T. Platt, London, 1884 states: 'The word "tobacco" is from the language of Hayty and meant first the pipe, secondly the plant, thirdly the sleep which followed its use.'[9]

The *hookah* inspired many writers of that time to write in its appreciation and the peculiar sound that emnates while it is being smoked. An example: 'It is a friend in whose bosom we may repose our most confidential secrets, and a counselor upon whose advice we may rely in our most important concerns—the music of its sound puts the warblings of the nightingale to shame, and the fragrance of its perfume brings a blush on the cheek of a Rose'.[24]

The employees of the East India Company widely adopted the habit of using *hookah* and

its use became common. It was later replaced by the cheroot as more conservative *memsahibs* (British women) started arriving in India and frowned on this strange 'native' habit.[24]

History of cigars

Cigars originated in the Carribean Islands. The mingling of French and British troops in Spain during the Peninsular War resulted in the entry of cigars into northern Europe.[25] The cigar was introduced into India around 1670.[25]

In India, commoners used *chutta* in Andhra Pradesh. There were a few unsuccessful attempts made to mechanize cigar production in Nashik (Maharashtra). The cigar industry at Woriyur, near Tiruchirapalli in Tamil Nadu, was a prosperous industry at one time and cigars made in this industry had good demand in the international market. Till about 1971, this industry earned about Rs 600,000 (US$ 12,500) worth of foreign exchange. However, the prosperity of this industry declined after the Union budget of 1978 imposed a 200% excise duty on branded cigars and cigarettes, which caused a steep reduction in the demand for cigars.[25]

History of cigarettes

Cigarettes were popular among Aztecs in 1518 when Spanish explorers sailed to the New World. Cigarettes were introduced to northern Europe during 1850s, when the British brought it back from the Crimean War. Around 1865, cigarettes reached the United States and around 1880, cigarettes were being mechanically manufactured. The first cigarette factory, Ferme Cigarette Factory, was established in St Petersburgh in Russia in 1850.[25]

The cigarette industry

The first cigarette factory, the Indian Tobacco Company of what is now known as ITC (formerly Imperial Tobacco Company) was established in Monghyr, Bihar, in 1906. In 1912, the first brand 'Scissors' was launched. The history of ILTD (Indian Leaf Tobacco Development Division), ITC's research subsidiary, reveals the history of production of cigarette tobacco in India. By 1928, the ILTD had obtained definite results and markedly increased the area under cultivation of Virginia tobacco.[26] At present, many national and multinational companies taken together manufacture about 100 brands of cigarettes.[16] The economic history of tobacco cultivation and manufacture is given in Section 2.2.

Other smoking forms of tobacco

By 1610, smoking had become extensive, among all socioeconomic and gender groups. *Cheroots* were commonly smoked by both Indian men and women and in south India. Smoking chutta was noted in the East Coast of India during 1670.[15] Both women and men, whether nobles or commoners, smoked tobacco.[16] *Beedi* smoking has been mentioned in 1711. It was described as a product about the size of the little finger, containing a small quantity of tobacco wrapped in the leaf of a tree and sold in bundles of 20–30 pieces. This description of the finger-sized products corresponds to *beedi* contemporarily available in India.[15]

Tobacco chewing in India

Tobacco, introduced as a product to be smoked, gradually began to be used in several other forms in India. It became an important additive to *paan* (betel quid).

Paan chewing as a habit has existed in India and South-East Asia for over 2000 years. Stone inscriptions from the year AD 473 are historical evidence of its existence. In Hindu culture (the predominant religion in India), *paan* chewing is referred to as one of the eight *bhogas* (enjoyments) of life.[16] *Paan* chewing was adopted even by invading kings and settlers in India. It was also a part of the Mughal culture. Several Mughal rulers were great connoisseurs of *paan* and employed specialists skilled in preparing *paans* to suit all occasions. The social acceptance and importance of *paan* increased further during the Mughal era.

The practice of chewing betel quid reached India by the first century or earlier. Some scholars believe that it was introduced from the South Sea Islands, Java and Sumatra, through contacts with the South Pacific Islands.[9] *Paan* chewing became a widely prevalent form of smokeless tobacco use after tobacco use took roots in India.[23] Women ate *paan* for cosmetic reasons as chewing it produced a bright red juice that coloured their mouth and lips. The ancient scriptures have mentioned the use of *paan* being forbidden to people who adopt a religious mode of life or observe vows, widows, menstruating women and students. This popular practice became a convenient vehicle for chewed tobacco. Inclusion of tobacco as one of the ingredients of *paan* highlights the importance of this product and wide social acceptability of tobacco chewing in ancient India. Tobacco was chewed by itself, with areca nut or with lime in India in as early as 1708.[16]

These historical accounts reveal that contemporary tobacco habits had beginnings during the seventeenth century. The Marathi poet Madhva Munisvara refers to तमाखू (tobacco), ज़रदा (tobacco used for chewing) and smoking accessories in some of his songs.

Thomas Bowrey, in his *Account of countries round the Bay of Bengal* mentioned that in the city of Achin, in the north of Sumatra, he was honoured with 'Betels and areca to eat and tobacco to chew, a custom used by all India and south seas over'.[9]

Early trade in tobacco

Tobacco cultivation started in India in the seventeenth century during Akbar's reign. Tobacco cultivation was well established by the time the East India Company arrived.[24] With the increase in the popularity of tobacco, it began to be grown in abundance in India. By the middle of the seventeenth century, from being a valuable commodity in barter trade it became an item of export to many ports along the Red Sea.

Tobacco use was popular to the extent that certain types of tobacco were especially imported during the early eighteenth century. The Maratha King Shahu, who was brought up at the Mughal court from where he developed the habit of smoking tobacco in his early life, used two types of tobacco:

(i) *Surati* (obtained from Surat) and
(ii) *Bagdadi* (obtained from Baghdad)

Both these types of tobacco mentioned as 'तमाखू सुरती' and 'तमाखू बगदादी' have been included in the list of articles ordered by Maratha King Shahu from the English, through Kanhoji Angria on 3 August 1715.[9]

Prohibitions and bans on tobacco use across the world

The demand for tobacco kept expanding steadily across the world and provided the impetus for increased production of tobacco. With the advent of controversies against tobacco use and concerns regarding the ill effects of tobacco use on human health, restrictions were laid in the past as well.

In 1586, King Felipe II, spoke of the tobacco plant as a 'forbidden and harmful plant'.[27] Sultan Murad IV of Turkey believed that tobacco use caused infertility and reduced the fighting capacity of his soldiers. He declared tobacco consumption to be a capital offence in 1633.[18] King James I of England has been described as the most learned man to ever occupy a British throne. In 1604, he increased taxes on tobacco by 4000%, from 2 pence/lb to 6 shillings 10 pence/lb, to reduce imports to the country.[28] In 1604 he wrote *A counterblast to tobacco*, where he made it evident that smoking is a bad practice. In this 'counterblast', the most interesting lines are the following: 'A custom loathsome to the eye, hateful to the nose, harmful to the brain, dangerous to the lungs, and in the black stinking fume thereof nearest resembling the horrible stygian smoke of the pit that is bottomless ... '[29]

Tobacco reached Iran from India and Portugal through traders. In Iran, smoking of tobacco had become such a fashion that high officials and nobles used to smoke even on horseback while travelling. Soon, the habit became so popular that even the general public started offering *hookah* to guests. Since many soldiers were addicted to smoking, Khalil Pasha of Iran issued a prohibitory decree against tobacco smoking and announced that anybody caught smoking would have his lips cut and eyes taken out. There is also documented evidence of a trader who was burnt to death along with his bags of tobacco for smoking.[29]

Prohibitions in India

Soon after its introduction towards the end of Akbar's reign, tobacco became a popular product. However, Jahangir—the son of Akbar, like his contemporaries, King James I of England and Shah Abbas I of Persia, believed tobacco to be a noxious drug and forbade its use.[30] Jahangir, after his accession on 24 October 1605, passed 12 orders to be observed as rules of conduct (*dastur-ul-amal*). These have been mentioned in his memoirs (*Tuzuk-e-Jahangiri*). His fifth order runs: 'They should not make wine or *darbahara* (rice-spirit) or any kind of intoxicating drug or sell them.'[30]

It is noteworthy that within twelve years of its introduction in India, Jahangir noticed the ill effects of tobacco and took measures to prohibit its use. In 1617, Jahangir passed orders against tobacco smoking and he referred to the efforts undertaken by Shah Abbas of Iran to prohibit the practice of smoking (Box 2.2).

Jahangir says: 'In consequence of the disturbance that tobacco brings about in most temperaments and constitutions, I had ordered that no one should smoke it. My brother Shah Abbas has also become aware of the mischief arising from it and had ordered that in Iran no one should venture to smoke.'[30] However, within a few years of his orders, tobacco was cultivated on an extensive scale and, by 1623, tobacco was being exported from the port of Surat.[30]

Box 2.2 Indian ambassador incurs Shah of Iran's displeasure for smoking

Jahangir sent his ambas-sador, Mirza Barkhordar Khan Alam to Shah Abbas I, the King of Iran. Shah Abbas did not like the smoke of hookah. Mirza Barkhordar Khan Alam was a habitual smoker and was addicted to smoking. He always carried a golden chapak (long pipe) with him. While he was sitting with the ambassadors of Spain, England and the Ottoman Empire, with Shah Abbas I, at Imam Quli Khan's house, the Indian ambassador smoked from the chapak. The black, foul-smelling smoke went from his mouth towards the king and others. Shah Abbas I did not like this tobacco smell but out of courtesy did not say anything. He asked the Spanish ambassador in Turki, so that the Indian ambassador would not understand, whether in his country people liked to smoke tobacco. The Spanish ambassador answered that 'in Spain, except the Red Americans and black-skinned Africans, nobody likes tobacco.' The Shah laughed at it and to avoid smoke and the Indian ambassador he left the place, but not before showing his disgust by lifting the turban of the host (Imam Quli) and throwing it away.[29] Jahangir later quoted the edicts of Shah Abbas I against smoking, in support of his own orders of prohibition.

Edward Terry, who in his youth was chaplain to Sir Thomas Roe, the ambassador of King James I in the court of Jahangir, was in India during 1615–1618. Terry's writings mention that Indians grew tobacco in abundance.[30] It is not clearly mentioned in *Tuzuk-e-Jahangiri* whether tobacco cultivation was prohibited as per Jahangir's orders. It is possible that Jahangir issued orders against the manufacture of wine but did not prohibit cultivation of tobacco. He explicitly issued prohibitory orders for smoking of tobacco but possibly did not issue any order against the cultivation of tobacco, since it was a commodity for export.[30]

However, Jahangir did not enforce any kind of penalty as was done by Khalil Pasha of Iran. Jahangir was certainly milder in this matter, though he was stern on some other issues of that time. This may have been because many of the nobles had become addicted to tobacco.

In the middle of the seventeenth century, the use of tobacco had become widely prevalent among warriors in the army of Maratha King Shivaji. In 1673, Shivaji issued an official order in which he warned his officers against careless smoking of tobacco pipes. He highlighted possible damage due to fire resulting from the careless use of tobacco, which could destroy the fodder for horses, etc.[9] The relevant extract from the order reads: 'Some will take away live coal for smoking their tobacco-pipes with, without minding the direction in which the wind might be blowing or the grass that might have been lying about, thus causing ruinous fires unexpectedly.'[9]

Influence of religion on the use of tobacco

Tobacco thrived everywhere in the world despite some social disapproval. References of tobacco being regarded as unholy in religious circles and its condemnation are cited in the literature of seventeenth and eighteenth centuries. A religious Marathi Muslim poet of the seventeenth century, Shaikh Mahomad at Shrigonde village of the Ahmadnagar district of Maharashtra, vigorously condemned the use of tobacco.[9] The following information is gathered from a 32-stanza extract from his work.

1. The habit of smoking tobacco was prevalent in all ranks of society.
2. The use of tobacco was not confined only to men but was extended to women as well (Stanza 26).
3. The evil effects of tobacco are noted by Shaikh Mahomad (Stanza 30).
4. Tobacco was not viewed with favour in religious circles to which Shaikh Mahomad belonged.
5. Shaikh Mahomad exhorts people to adopt a spiritual mode of life and avoid tobacco.
6. The above extract contains references to
   (i) तमाखु—tobacco
   (ii) गुडगुडी—*hookah*
   (iii) चिलमी—(Earthen) tobacco pipe
7. The same *hookah* or tobacco pipe was used by men and women of different castes without any sense of cleanliness. Even the Brahmins (a member of the highest or priestly Hindu caste) were addicted to its use.

The Marathi poet Madhva Munisvara has also condemned the use of tobacco in this poem.

जोगी जंगम सेवडे म्हणति ते आम्हांत यावे सुखें।
आफू भांग तमाखु सेविति तया तें तत्व बेंधू मुखें।।

The sentence translates as:

Whatever sermons are delivered to us by the sadhu and the wise, all that should be practised by us. We should not have the habit of taking आफू *(opium),* भांग *(hemp) and* तमाखू *(tobacco), and we should also enlighten the people who consume them about their effects.*

गुडगुडीचें पाणी नव्हे मंदाकिनी।
जीर मेरूवरूनि उतरलें।।६।।
अपवित्र गांजा तंबाखूचा धूम।
धूपारतीसम लेखू नये।।७।।

These lines of his poem refer to गुडगुडी (*hookah*) and the smoke of गांजा (hemp) and तमाखू (tobacco) being considered अपवि (unholy) among religious circles before AD 1733. The lines translate as:

The water of the sacred Mandakini river which descends from the Meru mountain is not to be compared with the normal water of pot. In the same manner, the smoke of tobacco and hemp is not to be compared with the sacred smoke of dhoop and incense.

In the Hindu *Dharma Shastra* (code of behaviour), the areca nut is said to please God *Brahma* (the creator), the betel leaves pay homage to Lord *Vishnu* (the protector), and slaked lime bows to Lord *Siva* (the destroyer). Ancient scriptures stipulate the number of betel leaves with which a *paan* must be made for specific individuals or use.

Sikhism and the use of tobacco

Proscription of tobacco in Sikhism has strong links with history. The tenth and the last guru of Sikhs, Guru Gobind Singh made a rule that all Sikhs should abstain from smoking saying: 'Wine is bad, *bhang* destroyeth one generation, but tobacco destroyeth all generations.' He banned tobacco on 13 April 1699.[29] The same day the Guru preached that each Sikh must take an oath at his baptism (the Amrit ceremony) that they will not use tobacco, which is the first baptismal rite that explicitly asks the person to abstain from tobacco.[31]

In 1931, the supreme Sikh Authority, the Akhal Takhat, made the Amrit pledge more stringent while announcing the Sikh code of conduct—*The Reht Maryada*. This code's Section four, Chapter X, Article XVI (J) describes the first tobacco control edict that all Sikhs are supposed to follow.[32] In this chapter, smoking and drug abuse are listed as part of the four misdeeds or *kurahat*.

Zoroastrian beliefs

Parsis, the Zoroastrians of India, landed on the West Coast of India during AD 936 or AD 716.[33] They fled from Persia to save themselves from the Arab conquerors who had invaded Persia.[34] Parsis landed in India carrying nothing but a holy flame from their temple. This small minority considers the fire as sacred and worships it. Their customs and manners forbid smoking.

Islam

The Holy Koran has no specific proscriptions against tobacco use. However, the Koran forbids the use of addictive or intoxicating substances and further proscribes harming oneself. The interpretation of these injunctions varies among people, with smokers tending to deny that they are addicted or that tobacco use is harmful to health. With growing scientific evidence of both the addictive properties and health hazards of tobacco, an opportunity exists of seeking re-interpretation of these injunctions by Islamic scholars.

Debates around tobacco at the dawn of Independence

Mahatma Gandhi, who led the movement for Indian independence from British rule, repeatedly spoke and wrote against the use of tobacco. He believed it to be both harmful to health and a waste of money.

India attained independence in the year 1947, and the Constitution of India came into effect on 26 January 1950. A draft of the constitution was published in February 1948. According to Article 47 of the Constitution: 'State shall endeavour to bring about prohibition of the consumption, except for medicinal purposes, of intoxicating drinks and drugs which are injurious to health.'

In 1948, Sardar Bhopinder Singh Mann, who was a member of Parliament and part of the drafting committee, proposed putting the word 'tobacco' between the words 'drinks' and 'drugs' in this clause. He stated: 'I am aware that in moving this amendment, I would be incurring the displeasure of the influential members of this House.' He also said: 'I have no doubt that tobacco is an intoxicant and is more harmful to health than liquor ... Take the villagers; they get liquor only off-and-on, but they smoke tobacco day and night ... As far as the economic aspect is concerned, I can assure you that much greater loss is incurred on account of tobacco than by liquor.' The Constituent Assembly rejected his motion.[17]

2.1 HISTORICAL RECORDS AND ANECDOTES

KEY MESSAGES

- Tobacco cultivation has a history of about 8000 years.
- Europeans were introduced to tobacco when Columbus landed in America in 1492.
- Tobacco's easy assimilation into the cultural rituals of many societies was facilitated by the medicinal (and perhaps intoxicating) properties attributed to it.
- Portuguese traders introduced tobacco in India during 1600. Tobacco became a valuable commodity in barter trade and its use spread rapidly.
- Tobacco smoking became a popular leisure activity in Europe during the early seventeenth century.
- Introduced initially as a product to be smoked, tobacco gradually began to be used in several other forms. *Paan* (betel quid) chewing became a widely prevalent form of smokeless tobacco use.
- Although some Chinese and European systems of medicine supported the use of tobacco, Ayurveda–the Indian system of medicine–never supported the use of tobacco as medication.
- The ill effects of tobacco use on human health were recognized even in the sixteenth century, which led to restrictions on its use even in earlier centuries.
- Tobacco thrived everywhere in the world despite social (and some religious) disapproval.

2.2

Economic History of Tobacco Production: From Colonial Origins to Contemporary Trends

Tobacco occupies a prime place in the Indian economy on account of its considerable contribution to the agricultural, industrial and export sectors. India is the second largest producer of tobacco in the world. China and the USA rank first and third, respectively, in terms of tobacco cultivation. Brazil, Turkey, Zimbabwe, Malawi, Italy and Greece are the other major tobacco producing countries. Tobacco contributes substantially to the economies of these countries. In 2000–2001, the contribution of tobacco to the Indian economy was to the extent of Rs 81,820 million, which accounted for about 12% of the total excise collections. Foreign exchange earnings during the same period were Rs 9030 million accounting for 4% of India's total agricultural exports. Endowed with favourable agro-climatic attributes such as fertile soil, rainfall and ample sunshine, India has the potential of producing different varieties of tobacco with varied flavours.

Figure 2.3 shows the locations and varieties of tobacco grown in various Indian states. Andhra Pradesh, Gujarat, Karnataka, Maharashtra, Bihar and Tamil Nadu are the major tobacco producing states in India. Around 65% of India's production comes from Andhra Pradesh (34%), Gujarat (22%) and Karnataka (11%). Tobacco is also grown in Orissa, Uttar Pradesh and West Bengal. Andhra Pradesh, Gujarat, Karnataka and Uttar Pradesh together account for over 90% of the total tobacco production in the country.

Currently, Indian tobacco is exported to more than 80 countries spread over all the continents.

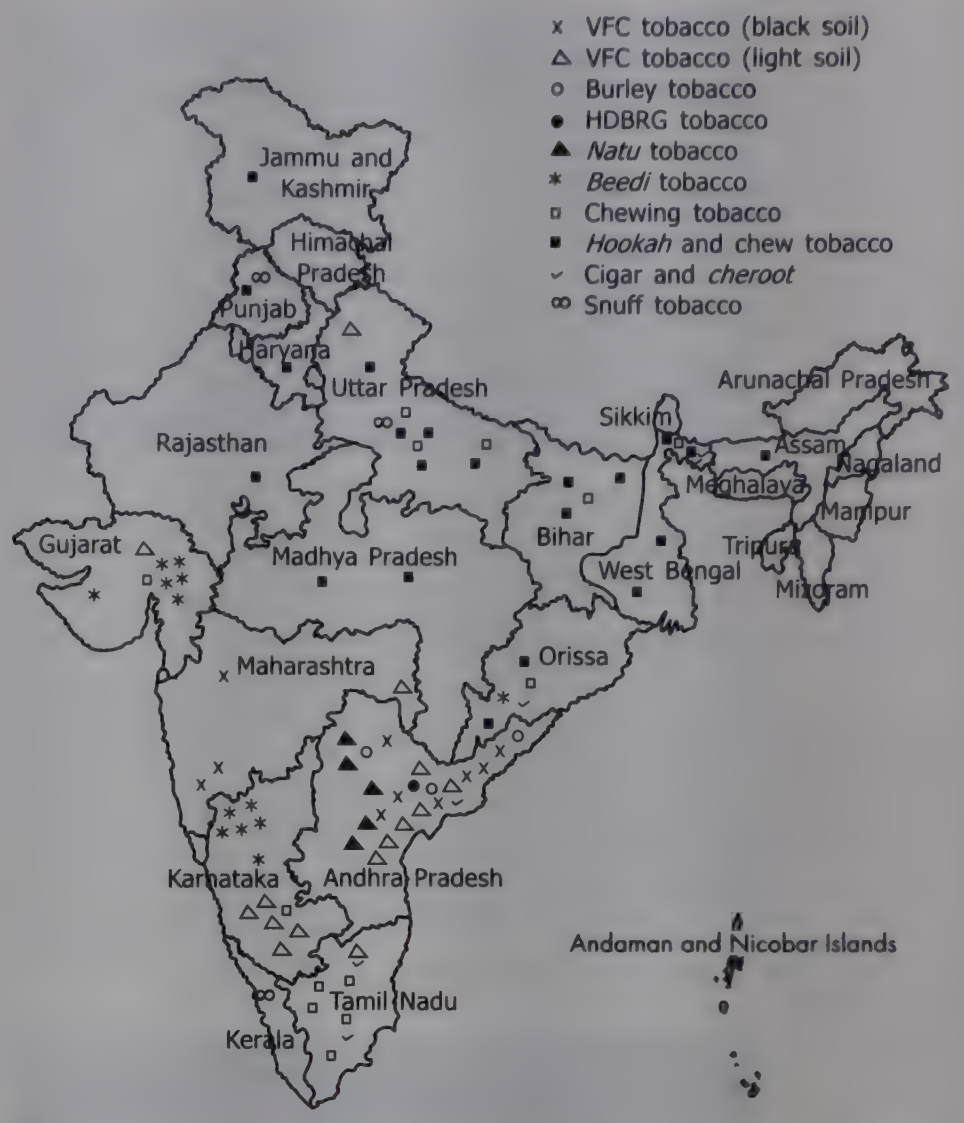


Fig. 2.3 The tobacco map of India (Note: map not to scale)

A few of the top multinational companies such as British American Tobacco (BAT), Philip Morris, RJ Reynolds, Seita, Imperials, Reemtsma, etc. and many companies with government monopoly import Indian tobacco either directly or indirectly.

The Indian market for tobacco products, however, has some characteristics rather different from most other markets. India has a large, highly integrated tobacco industry, which involves the cultivation of several varieties of tobacco, the manufacture of different tobacco products, including unprocessed and chewing tobacco, and an extensive distribution and retail system. Over the years, a combination of strong prices, domestic consumption, good export demand for tobacco and low prices of other crops helped the growth of tobacco from a cash crop to a manufacturing industry linked with commercial considerations. The tobacco industry in India includes the production, distribution and consumption of (i) leaf tobacco, (ii) smoking products such as cigarettes and

beedis and (iii) various chewing tobacco products. These factors present policy-makers with an unenviable dilemma. On the one hand, it is a robust and largely irrigation-independent crop, provides substantial employment, has significant export potential and, most importantly, is a source of ever-growing tax revenues. On the other hand, there are public health concerns about the effects of smoking with health advocacy groups and consumer-led lobbies asking for more controls on tobacco. In spite of its proven adverse implications for public health, the industry sustains itself in many quarters on the grounds of its contribution to employment and national production. The organized sector of the industry, dominated by multinational corporations, is at the forefront of canvassing support for the sector. The unorganized sector too exploits its emotive appeal as a mass employer of the poor, especially rural women.

Economic history of tobacco

The immediate and tangible benefits that accrue from tobacco cultivation, manufacture and marketing act as incentives for farmers to grow tobacco and for the government to encourage tobacco cultivation and manufacture.

Tobacco has developed from a commodity to which great importance and value were attached (because of its presumed medicinal and evident intoxicant properties), and hence used for barter trade during the sixteenth and seventeenth centuries, to a cash crop in subsequent periods. The following aspects of tobacco can help in understanding why it has developed as a cash crop:

1. Tobacco has been contributing substantially to the total agricultural income.
2. It yields high net returns per unit of cultivation as compared to other crops.
3. It provides employment opportunities, both in agriculture and activities involved in the manufacture of tobacco products.
4. It is a major foreign exchange earner.
5. It is an important source of revenue, which can be tapped relatively more easily than many other commodities. In view of its special qualities, a levy on it does not cause marked substitution effects and what the noted fiscal expert, Richard Musgrave terms 'the spite effects'.[35] Therefore, in practically every fiscal budget in India, the finance minister proposes raising a levy on tobacco products and justifies it on the ground that tobacco consumption is injurious to health.
6. There is considerable domestic and international demand for tobacco and its products.

The historical developments relating to the economic aspects of tobacco in India can be studied in two periods: the colonial era before India became independent in 1947 and the post-Independence period of national governance and policy-making.

Pre-Independence period

Tobacco was initially grown in the Deccan region (South Central India), during 1605, and later spread to other parts.[36] The Virginia variety of tobacco was introduced in India in Andhra Pradesh in 1920 by the British officers of the Indian Leaf Tobacco Development Company (Box 2.3).[37–40] Sir Forbes Watson's *Cultivation and preparation of tobacco in India* (1871), said to be one of the earliest publications on tobacco, tells us more about Indian tobacco. Table 2.1 shows the area under tobacco cultivation and production in British India.[37,41]

The area under tobacco cultivation increased three times during the period from 1891–1892

Table 2.1 Area under tobacco cultivation and production in British India[37,41]

Year	Area (x 1000 ha)	Production (million kg)
1891–1892	132.30	–
1920–1921	425.10	–
1939–1940	413.36	344.38
1945–1946	357.49	336.25

Source: Indian Central Tobacco Committee (ICTC) 1960; Sanghvi 1992

Box 2.3 Steps taken by the government (British India) to introduce tobacco as a major crop[37–40]

1787—Establishment of the Botanical Gardens at Sibpur, Calcutta (trials to grow tobacco were conducted).

1829—The government's decided to promote cultivation of superior tobacco. Imported seeds were made available to the Agrihorticulture Society of Calcutta and trials on an improved variety continued for several years.

1875—Attempts were made to produce Virginia tobacco at Ghazipur in Uttar Pradesh.

1875—Growing and curing of tobacco continued in the Pusa farm in Bihar.

1901—The British and American Tobacco Company expanded their trade into India and set up three companies, which later together became the Imperial Tobacco Company India, i.e. the present Indian Tobacco Company (ITC) Ltd.

1903—The establishment of the Imperial Agricultural Research Institute and College at the Pusa farm initiated the cultivation of a new variety of tobacco.

1920—The Indian Leaf Tobacco Division (ILTD) of ITC experimented on the black soils of Guntur, Andhra Pradesh and successfully cultivated Virginia tobacco in 1928.

1929—Commercial and large-scale production of tobacco was initiated by the ILTD. The company established demonstration barns, provided technical guidance to them and encouraged local farmers to grow tobacco by providing financial assistance to construct barns, purchase fertilizers, wood fuel, etc. Slowly, tobacco cultivation spread to all the coastal districts of Andhra Pradesh.

1933—The ILTD introduced flue-cured Virginia (FCV) tobacco into the international market.

1936—A cigarette tobacco research station was established in Guntur to study the effect of soil and manure on the flavour of tobacco.

1937—Tobacco cultivation was introduced in Karnataka (Mysore State) by the Mysore Tobacco Company Ltd.

1938—India produced 499 million kg of tobacco and ranked second in production next to the USA (628.7 million kg). China was the third largest producer (446.8 million kg).

1940s—Cultivation of FCV tobacco was initiated in north Bihar (1940), Uttar Pradesh (1940) and Gujarat (1945–1946). In the first year (1943–1944), excise revenue from tobacco was Rs 9.65 crore. This led the government to explore other types of tax on tobacco as well to initiate measures to promote tobacco cultivation.

1943—The government set apart an annual, non-lapsable grant of Rs 10 lakh from the proceeds of excise duty imposed to extend the cultivation of high-quality leaf and improve the production of tobacco.

1945—The Tobacco Grading Inspectorate was established at Guntur to ensure the quality control of tobacco for exports, and the setting up of the Indian Central Tobacco Committee (ICTC) to look after the cultivation, technical and economic aspects of tobacco cultivation in India.

Adapted from ICTC 1960; Directorate of Tobacco Development 1997; Kori 1998; Tobacco Board 2002

Table 2.2 Tobacco trade in British India (Rs in million)[41]

Year	Exports	Imports
1881–1882	1.20	0.63
1991–1992	1.41	1.17
1912–1913	3.84	6.94
1920–1921	7.49	25.59
1921–1922	7.18	16.51

Source: Sanghvi 1992

to 1920–1921. Since then, the area under tobacco cultivation has been hovering around four lakh hectares. The value of imports shown in Table 2.2 reveals that there was a great demand for tobacco, particularly cigarettes, by 1920. Since cigarettes were not manufactured in India, imports increased to meet the domestic demand. Revenue from tobacco increased six times, while the value of imports increased 26 times during a period of 40 years.

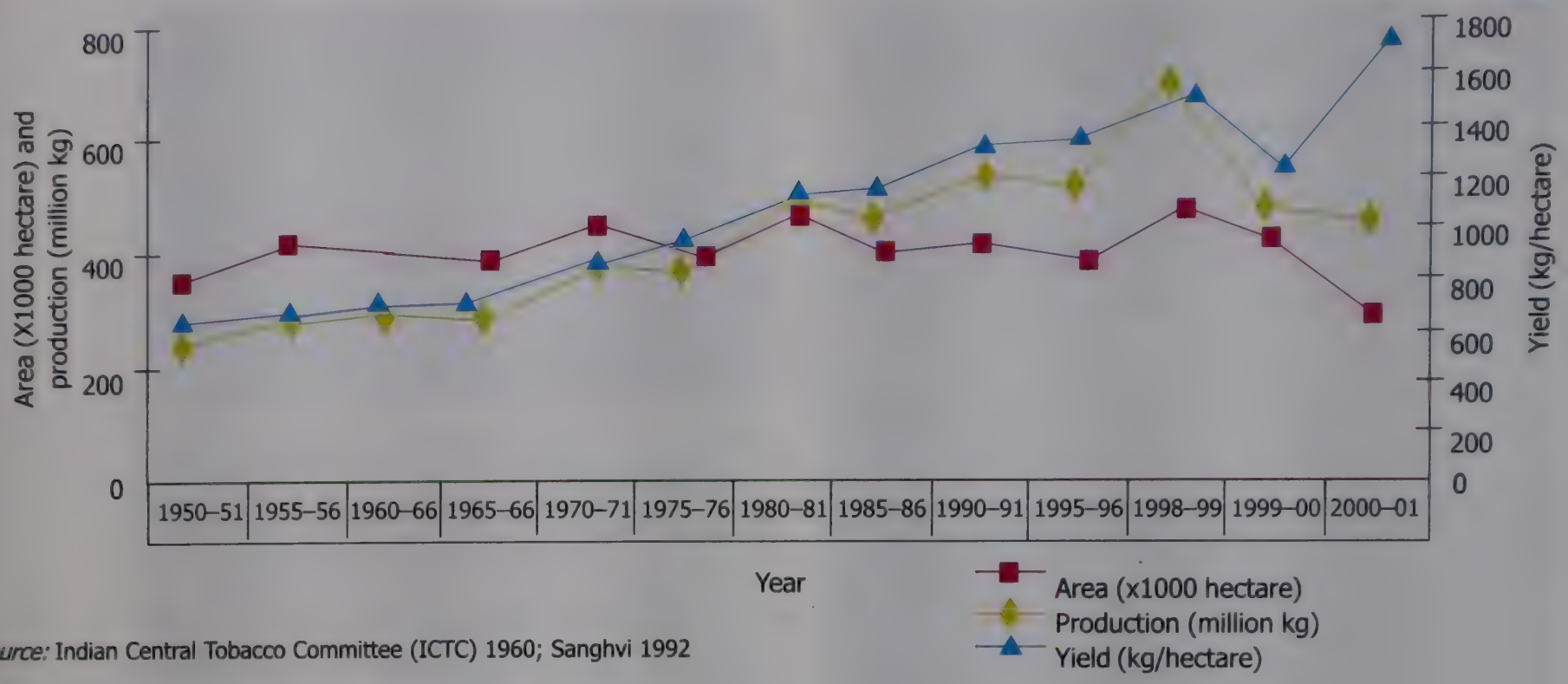
Post-Independence period

Although tobacco was grown in many parts of India during the 1950s, the best quality crop was grown in Bihar, West Bengal, Tamil Nadu, Karnataka, Maharashtra, Punjab and Andhra Pradesh.[42]

Cultivation of flue-cured Virginia (FCV) tobacco spread to Tamil Nadu (1957–1958), Maharashtra (1961–1962) and West Bengal (1966). Till the 1960s, the cultivation of FCV tobacco was traditionally confined to the black soils in India. However, with increasing demand for light-bodied leaves and low nicotine/tar content, its cultivation was extended to Karnataka's light soils. Madras (now Chennai) was leading in the area under tobacco cultivation until the formation of Andhra Pradesh in 1953. West Bengal was also one of the leading producers before 1947.

Figure 2.4 and Table 2.3 give details of tobacco cultivation and consumption, and the revenue derived from it in the post-Independence period.[37–41]

The area under tobacco increased within the first 20 years of Independence. Although there



Source: Indian Central Tobacco Committee (ICTC) 1960; Sanghvi 1992

Fig. 2.4 Trends in area, production and yield (all India)[37,41]

was a steep reduction in the area in 1975–1976, by 1980–1981, the area under cultivation increased by 22%. This increase was the result of initial efforts taken by the Tobacco Board set up in 1975. The reduction in crop area, observed in 2001, was due to a crop holiday observed in Andhra Pradesh. This was in response to an unsold surplus of tobacco produce from the preceding years. These fluctuations have occurred only in the tobacco growing regions of India. Overall, the area under cultivation has been limited to four lakh hectares, because of the non-suitability of the soil for tabacco cultivation in other parts of India.

From 1951 to 2001, there was an increase in the production by 130%, in excise revenue by 31,614%, in export revenue by 5823% and in consumption by 92% (Table 2.3).

The worldwide trend in the area of tobacco cultivation and production shows that while there has been a relatively modest growth in the area under tobacco cultivation, a steady growth in the production area has taken place, pointing to substantial productivity gains. There has also been a shift in tobacco production from the developed to developing countries. India's share in the world tobacco production was 10.2% in 2000, while that of China was 36.7%. However, in terms of productivity, India has always remained much below the world average by 20%–40%. An analysis of variety-wise tobacco production reveals that the bulk of total tobacco production in India consists of non-cigarette tobacco products as there is a strong, but unorganized, domestic market for non-cigarette tobacco products. Production of cigarette tobacco, mainly FCV, though increasing, still

Table 2.3 Tobacco economy in the post-Independence period[39,41]

Year	Area (X1000 hectare)	Production (million kg)	Excise revenue (Rs in million)	Export revenue (Rs in million)	Tobacco consumption (million kg)
1950–1951	360	260	258	150	245
1960–1961	400	310	540	160	328
1970–1971	450	360	2284	320	367
1980–1981	450	480	7553	1400	360
1990–1991	410	560	2,6957	2630	474
2000–2001	290	490	8,1824	9034	470
2001–2002	–	601	–	8885	–

Source: Tobacco Board 2002, Directorate of Tobacco Development 1997

accounts for only 30% of the total production in the country. This is because of the 200 million tobacco consumers in India, only 13% consume it in the form of cigarettes, while 54% consume it in the form of *beedi* and the rest in raw/*gutka* forms.[43] Worldwide, 85% of the tobacco cultivated is used in the production of cigarettes. Hence, the tobacco consumption pattern in India markedly differs from the rest of the world in terms of product configuration. Developments in the post-Independence period are listed in Box 2.4.[38,40]

A special feature of the domestic tobacco production scene in India is the varietal composition of the produce. India is the only country where the bulk of production consists of numerous non-smoking types of tobacco. The presence of a strong domestic demand for *beedi*, *hookah*, chewing and snuff tobacco necessitates the cultivation of non-cigarette types of tobacco to a relatively large extent. An analysis of variety-wise production of tobacco shows that during 1997–1998, *beedis* accounted for 29.6% of the total area under tobacco cultivation and 29.5% of the total production, whereas Virginia tobacco used in cigarettes was grown on 39.1% of the area under tobacco cultivation and accounted for 23.6% of the total production. However, the share of chewing tobacco in India's tobacco production has risen steadily over the years from 11.7% in 1993–1994 to 29.1% in 1997–1998.

Box 2.4 Developments in the post-Independence period[38,40]

1947—The Indian Central Tobacco Committee (ICTC) established the Central Tobacco Research Institute for undertaking research on cigarettes and the Lanka type of tobacco. Later, four research stations were established in Tamil Nadu (in 1948 for cigarette, cheroot and chewing tobacco), Bihar (in 1950 for hookah and chewing tobacco), West Bengal (in 1952 for wrapper and hookah tobacco) and Karnataka (in 1957 for flue-cured Virginia [FCV] tobacco) for studying different types of tobacco.

1956—The Tobacco Export Promotion Council (TEPC) was established to support, protect and promote the export of tobacco.

1965—The ICTC was abolished.

1966—The Directorate of Tobacco Development was established to act as an information agency on tobacco production, trade, marketing, export, consumption, etc.

1975—The Tobacco Board was constituted under the Tobacco Act, 1975, replacing the TEPC. The Tobacco Board is responsible for regulating the cultivation, production, marketing and export of FCV tobacco.

1983—The National Cooperative Tobacco Growers Federation Ltd. (TOBACCOFED) was established by the Ministry of Agriculture and Rural Development to promote the production and marketing of non-FCV tobacco in the country. However, TOBACCOFED is defunct since several years.

1980-81—The Agricultural Price Commission recommended a minimum support price for FCV tobacco grown in light and black soils.

1984—Auction sale of FCV tobacco was introduced for the first time by the Tobacco Board in Karnataka and in Andhra Pradesh in 1985.

Adapted from Tobacco Board 2002; Directorate of Tobacco Development 1997

Types of tobacco grown in India

Unmanufactured tobacco is either exported, directly consumed as chewing tobacco, or used as an input in the production of manufactured items such as cigarettes, cigars and *beedis*. Usually, there are seven broad types of unmanufactured tobacco, based on the end-use and curing methods. These are: (i) FCV, (ii) Burley, (iii) Oriental, (iv) dark air/sun-cured, (v) light air-cured, (vi) dark air-cured (cigar) and (vii) dark fire-cured.

Currently, India produces 600 million kg (dry weight) of tobacco on an average. Of this, FCV tobacco accounts for 31% (185 million kg). Cigarette (FCV), *beedi*, chewing, *hookah*, cigar, cheroot, snuff, *natu* and Burley tobacco are grown in different parts of India. FCV, burley and *natu* tobacco are the three main varieties of cigarette tobacco. Flue-cured Virginia tobacco is the primary ingredient in the manufacture of cigarettes. It is mainly cultivated in Andhra Pradesh and Karnataka, whereas *beedi* tobacco is grown in Gujarat. Tobacco used for chewing and *hookah* are grown in other tobacco producing states of India. Burley and Oriental types are blended with FCV in appropriate

proportions to create specific qualities of tobacco for cigarettes to cater to the taste of smokers.

- *Beedi* tobacco: This occupies 30%–35% of the total area under tobacco cultivation and is grown in Gujarat, Karnataka and Maharashtra. Nearly 85% of the world's *beedi* tobacco is grown in India. The average yield varies between 1000 and 1700 kg/hectare in Karnataka and Gujarat, respectively.
- FCV tobacco: It is grown in Andhra Pradesh and Karnataka. A small quantity of this tobacco is also grown in Orissa (Rayagarh) and Maharashtra (Gadchiroli). It is the most remunerative crop due to the demand from domestic cigarette manufacturers and importers. In 2000–2001, the average yield of FCV tobacco was 1710 kg/hectare. Fifty per cent of the FCV grown in India is used by the domestic cigarette industry while the remaining is exported.
- Burley tobacco: This air-cured form of tobacco is used for cigarette blends and is grown in Andhra Pradesh.
- *Hookah* tobacco: (*Nicotiana rustica* variety) It is used for smoking and is grown in Uttar Pradesh, Bihar, West Bengal and Orissa.
- Chewing tobacco: This is used for *gutka*, snuff and pipe tobacco. It is grown in Tamil Nadu, Uttar Pradesh, Bihar, West Bengal and Orissa.
- *Natu* tobacco: It is sun-cured and grown in Andhra Pradesh.
- Cigar tobacco: This type of tobacco is grown in West Bengal and Tamil Nadu.
- *Cheroot* tobacco: It is grown in Tamil Nadu and Andhra Pradesh.

The production of different varieties of tobacco in India is shown in Table 2.4.[44]

Table 2.4 Types of tobacco produced in India (2002)[44]

Type of tobacco	Quantity (million kg)
Cigarette tobacco	
FCV	175
Dark air/sun-cured	40
Burley	8
HDBRG	20
Oriental	0.1
DWFC	1
Subtotal	244.1
Non-cigarette tobacco	
Beedi	200
Chewing tobacco	65
Cigar	22
Hookah	60
Snuff	10
Subtotal	357
Total	601.1

FCV: flue-cured Virginia; HDBRG:; Harvel De Bouxo Rio Grande; DWFC: Dark western fire-cured
Source: www.indiantobacco.com

Unmanufactured tobacco

Recently, India became one of the largest producers of unmanufactured tobacco, ranking third after China and the USA (Table 2.5).[45] China produces 39.2% of the total world production, while India's share of unmanufactured tobacco production is 10.5%. During 2002–2003, the world production of unmanufactured tobacco was 6,024,000 tonnes of which India produced 592,000 tonnes. This is estimated to increase to 595,000 tonnes in 2003–2004.

Manufactured tobacco

Manufactured tobacco is typically used for smoking such as in cigarettes and *beedis*, and in some varieties of chewing tobaccos. The production of different varieties of tobacco is directly related to the pattern of consumption. Internationally, smoking tobacco usage has shifted from traditional products such as hand-rolled cigarettes, cigars, cheroots, *beedis*, pipes and *hookah* to cigarettes (both filter and non-filter). As shown in Table 2.6, there has been an overall shift in manufactured tobacco production towards smoking use in India.[46] In this respect, the Indian trend is similar to the worldwide trend of more smoking tobacco products. The pattern of production within smoking products, however, presents a sharp contrast to the worldwide trend. *Beedi* is the dominant form of tobacco produced in Indian manufacturing units. *Beedis* alone account for 31% of all manufactured tobacco production while the

Table 2.5 World unmanufactured tobacco production (in tonnes)[45]

	Production (in tonnes)			Share in world production (%)		
	1998–1999	2002–2003 (p)	2003–2004 (f)	1998–1999	2002–2003 (p)	2003–2004 (f)
China	2,010,250	2,365,988	2,224,481	32.2	39.3	39.2
United States	604,131	358,363	339,241	9.7	5.9	5.9
India	572,200	592,000	595,000	9.2	9.8	10.5
Brazil	373,150	551,250	515,720	5.9	9.2	9.1
Turkey	217,570	133,812	142,190	3.5	2.2	2.5
Indonesia	123,653	144,700	135,000	1.9	2.4	2.4
Malawi	95,996	124,301	122,580	1.5	2.1	2.2
Greece	127,000	120,000	121,000	2.0	1.9	2.1
Italy	112,225	108,460	106,250	1.8	1.8	1.9
Argentina	98,100	106,000	97,700	1.6	1.8	1.7
Pakistan	84,636	84,721	86,389	1.4	1.4	1.5
Others	1,815,666	1,335,094	1,187,016	29.1	22.2	20.9
World total	6,234,577	6,024,689	5,672,567	100	100	100

p: preliminary; f: forecast

Source: United States Department of Agriculture (USDA) estimates for February 2004

Table 2.6 Value of the gross output of the manufactured tobacco sector[46]

Year	Value (Rs in million)						Share (%)				
	Sector 225	Sector 226	Sector 227	Sector 228	Sector 229	Total	Sector 225	Sector 226	Sector 227	Sector 228	Sector 229
1973–1974	1509.3	770.4	1504.7	453.3	4237.7	35.6	18.2	35.5	10.8		
1974–1975	1557.4	714.3	1317.4	444.6	4033.7	38.6	17.7	32.7	11.0		
1975–1976	1765.8	1055.9	2336.9	335.1	5493.7	32.1	19.2	42.5	6.1		
1976–1977	1952.8	2055.9	2758.3	440.0	7207.0	27.1	28.6	38.3	6.1		
1977–1978	2481.0	2704.9	2166.0	506.3	7858.2	31.6	34.4	27.6	6.4		
1978–1979	2565.8	2703.3	2519.4	556.3	8344.8	30.8	32.4	30.2	6.7		
1979–1980	2234.9	2824.4	1989.6	665.4	7714.3	28.9	36.6	25.8	8.6		
1980–1981	2445.4	2825.2	1821.5	701.1	7793.2	31.4	36.3	23.4	9.0		
1981–1982	3218.4	3481.7	2170.1	738.0	9608.2	33.5	36.2	22.6	7.7		
1982–1983	3187.5	4403.5	1445.8	1150.8	10,187.6	31.3	43.2	14.2	11.3		
1983–1984	3818.1	4420.1	4634.3	1394.3	14,266.8	26.8	30.9	32.5	9.8		
1984–1985	3290.2	5162.0	2994.4	1417.1	12,863.7	25.6	40.1	23.3	11.0		
1985–1986	3303.1	5257.6	3884.1	1443.7	13,888.5	23.8	37.9	27.8	10.4		
1986–1987	3057.5	6648.6	4275.4	1707.9	15,689.4	19.5	42.4	27.3	10.9		
1987–1988	2641.7	8428.3	4764.3	2085.0	17,919.3	14.7	47.0	26.6	11.6		
1988–1989	2824.1	9472.3	6720.4	2425.6	21,442.4	13.2	44.2	31.4	11.3		
1989–1990	4350.0	12,499.6	6919.4	3027.3	1149.2	27,945.5	15.6	44.7	24.8	10.8	4.1
1990–1991	5,1171.0	15,933.3	8605.3	3225.8	1733.4	34,614.9	14.8	46.0	24.9	9.3	5.0
1991–1992	8380.3	16,422.5	9874.8	2723.8	2468.4	39,869.8	21.0	41.2	24.8	6.8	6.2
1992–1993	9340.6	18,529.2	12,826.7	3398.5	3124.6	47,219.6	19.8	39.2	27.2	7.2	6.6
1993–1994	11,111.3	21,115.2	13,158.9	4503.0	3614.9	53,503.3	20.8	39.5	24.6	8.4	6.8
1994–1995	10,904.7	21,280.7	15,279.1	4289.2	4198.2	55,951.9	19.5	38.0	27.4	7.7	7.5
1995–1996	9777.1	18,681.9	13,609.2	5036.3	6181.5	532,860.0	18.4	35.1	25.5	9.5	11.6
1996–1997	13,742.3	22,696.2	21,112.6	5184.4	9077.7	71,813.2	19.1	31.6	29.4	7.2	12.6
1997–1998	11,939.1	24,919.6	26,832.4	8159.6	8468.9	80,319.6	14.9	31.0	33.4	10.2	10.5

225: tobacco stemming, redrying and other operations; 226: manufacture of *beedis*; 227: manufacture of cigars, cigarettes, cheroots and cigarette tobacco; 228: manufacture of snuff, *zarda*, chewing tobacco and other tobacco products; 229: manufacture of *paan masala*, catechu and chewing lime.

Source: Central Statistical Organization

share of cigarettes, cigars, *cheroots* and cigarette tobacco was 33% in 1997–1998. However, the production of chewing tobaccos such as *paan masala* and catechu is increasing over the years. The overall trend of total manufactured tobacco production showed a steady increase from Rs 4237.7 million in 1973–1974 to Rs 80,319.6 million in 1997–1998.

Of the four major manufacturers of cigarettes in India—the Indian Tobacco Company (ITC) Limited, Godfrey Phillips India (GPI) Limited, Vazir Sultan Tobacco (VST) Industries Limited and Golden Tobacco Company (GTC) Limited (Table 2.7)—ITC Limited alone accounts for more than 60% of the total production, and 80% of the sales and market share.[47–49] The cigarette industry all over the world is facing a declining trend and increased activity from anti-smoking lobbies. According to the US Department of Agriculture (USDA) estimates (Table 2.8), the production of cigarettes in India has declined from 98,000 sticks in 1997–1998 to 93,000 sticks in 2002–2003.[45] Although the share of domestic cigarette production has increased marginally over the years, it has mostly remained stable within the range of 1.5%–1.9%. According to the data provided by the Indian Tobacco Board and Reserve Bank of India (RBI), the production of cigarettes reached a peak of 94,050 million sticks in 1982–1983, declining subsequently thereafter.[50,51] In the 1990s, production started again, increasing till 1999–2000, and showed a decline for the next two years till 2002.

Consumption of tobacco

India is one of the biggest tobacco markets in the world, ranking third in total tobacco consumption behind only the markets of China and the United States. However, the per capita consumption in the country is 0.9 kg compared to the world average of 1.8 kg.[43] Domestic unmanufactured tobacco consumption has increased from 483,360 tonnes in 1998–1999 to 488,130 tonnes in 2003–2004 (Table 2.9).[45] Tobacco usage in India is contrary to world trends since chewing tobacco and *beedi* are the dominant forms of tobacco consumption, whereas internationally, cigarette is the dominant form of tobacco use.

The use of tobacco and its various products appears to have declined in the rural and urban populations of India over the period from 1987–1988 to 1999–2000. According to the National Sample Survey (NSS) data shown in Table 2.10, consumption of tobacco in all recorded forms has reduced.[52] This trend of decline in consumption is faster among the urban population. Since *gutka* is a recent entrant, the trends of oral tobacco use are not clearly

Table 2.7 Production, sales and market share of major manufacturers of cigarettes in India[47–49]

Company	Production (in millions)			Sales (Rs in million)			Market share (%)		
	1991–1992	1996–1997	2001–2002	1991–1992	1996–1997	2001–2002	1991–1992	1996–1997	2001–2002
ITC Ltd	32,953	46,094	53,551	22307.0	49270.7	80135.8	62.4	75.2	80.6
Godfrey Phillips India Ltd	15,802	12,896	8857	6704.9	8037.1	8944.9	18.8	12.3	9.0
VST Industries Ltd	14,900	13,545	8990	5089.1	5368.8	6499.8	14.2	8.2	6.5
GTC Industries Ltd	1866	8344	7214	1558.0	2502.1	3584.6	4.4	3.8	3.6
Total of the major four companies	65,521	80,879	78,612	35,659.0	65,178.7	99,165.1			
Total	70,563	83,078	88,000	35,739.7	65,358.2	99,381.4			
Share of ITC Ltd in total (%)	46.7	55.5	60.9	62.4	75.4	80.6			

Source: Centre for Monitoring Indian Economy (CMIE) Prowess (Release 2) database 2004; and CMIE, 'Industry market size and shares', July 1998 and August 2003

Table 2.8 World cigarette production (1000 sticks)[47]

	Total production			Share in world production (%)		
	1997– 1998	2001–2002 (p)	2002– 2003 (f)	1997–1998	2001–2002 (p)	2002–003 (f)
China	1,683,549	1,709,505	1,735,000	30.2	30.5	34.5
Russia	180,500	375,000	380,000	3.2	6.7	7.6
Japan	267,050	229,000	224,000	4.8	4.1	4.5
Germany	181,904	212,500	211,000	3.3	3.8	4.2
Indonesia	216,200	200,358	186,000	3.9	3.6	3.7
Turkey	118,020	130,830	134,500	2.1	2.3	2.7
UK	163,547	133,014	130,000	2.9	2.4	2.6
Netherlands	116,263	126,292	126,500	2.1	2.3	2.5
Brazil	170,000	106,685	101,580	3.1	1.9	2.0
India	98,000	90,500	93,000	1.8	1.6	1.9
Korea	103,586	93,750	92,000	1.9	1.7	1.8
Others	2,282,148	2,194,477	1,622,069	40.9	39.2	32.2
World total	5,580,767	5,601,911	5,035,649	100	100	100

p: preliminary; f: forecast

Source: United States Department of Agriculture (USDA) estimates for February 2004

documented by using *paan*–tobacco alone as an indicator. After 1987–88, there is a declining trend in the consumption of the smoked forms, in both urban and rural areas.

Total cigarette consumption increased from 62,908 million sticks in 1970 to 81,514 million sticks in 1997. However, the per capita consumption of cigarettes decreased from 190 sticks in 1970 to 129 sticks in 1997. More recently, a decline in the number of cigarette sticks consumed has been noted (Table 2.11).[46] On the other hand, the share of domestic consumption of unmanufactured tobacco went up from 6.9% in 1997–1998 to 7.5% in 2002–2003. Over the years, India's position has increased from the third- to the second-largest unmanufactured tobacco consuming country in the world. This suggests that compared to cigarettes, more of the other forms of tobacco are consumed in India and that this trend is increasing in recent years.

Table 2.9 World unmanufactured tobacco consumption (in tonnes)[48]

	Total domestic consumption			Share in world consumption		
	1997–1998	2001–2002 (p)	2002–2003 (f)	1997–1998	2001–2002 (p)	2002–2003 (f)
China	2,341,759	2,772,904	2,897,554	33.4	42.0	44.3
India	483,360	481,130	488,130	6.9	7.2	7.5
Russia	180,460	309,300	293,100	2.6	4.7	4.5
Germany	142,651	180,000	162,000	2.0	2.7	2.5
Japan	172,700	149,000	149,000	2.5	2.3	2.3
Indonesia	133,300	155,140	142,491	1.9	2.4	2.2
Turkey	108,850	120,100	123,000	1.6	1.8	1.9
Brazil	155,925	112,525	107,700	2.2	1.7	1.7
UK	136,750	100,750	100,750	1.9	1.5	1.5
USA	616,835	463,190	444,190	8.8	7.0	6.8
Philippines	74,690	94,120	96,320	1.1	1.4	1.5
Others	2,472,732	1,663,606	1,536,574	35.21	25.2	23.5
World Total	7,020,012	6,601,765	6,540,809	100	100	100

P: preliminary; f: forecast

Source: United States Department of Agriculture (USDA) estimates for February 2004

Table 2.10 Monthly per capita quantity and value of consumption per 30 days[52]

NSS Round	Year	*Paan* (finished)		*Beedi* (number)		Cigarettes (number)	
		Quantity	Value (Rs)	Quantity	Value (Rs)	Quantity	Value (Rs)
Rural							
17	1961–1962	–	–	28.9	–	1.0	–
43	1987–1988	0.7	0.21	49.5	1.93	1.1	0.27
50	1993–1994	0.6	0.39	45.7	3.70	0.8	0.45
55	1999–2000	0.8	0.78	38.2	4.91	0.9	0.88
Urban							
17	1961–1962	–	–	47.5	–	7.7	–
43	1987–1988	1.7	0.70	38.7	1.60	4.9	1.47
50	1993–1994	1.4	1.16	32.4	2.79	3.7	2.45
55	1999–2000	1.2	1.76	22.1	3.12	3.2	3.68

Source: National Sample Survey (NSS) 2001

Facilitators of tobacco production in India

The Tobacco Board, agricultural research institutes located in different parts of India and the tobacco industry, particularly ITC, are facilitating the sustained production of different types of tobacco in the country. *Beedi* tobacco seeds are supplied by the research station at Anand (Gujarat) whereas FCV tobacco seeds are supplied by the Central Tobacco Research Institute (CTRI) and ITC. In addition, research institutes affiliated to the Indian Council of Agricultural Research (ICAR) and universities are undertaking research on new and improved varieties. The Tobacco Board is promoting the production of FCV tobacco through regulated cultivation, processing and marketing of tobacco. Subsidies are provided for the purchase of coal, fertilizers, sprinkler sets, installing barn insulation, etc. Extension programmes, namely, demonstration plots, study tours, web portals, flow of bank credit via tie-up arrangements, meetings with exporters and importers, etc. are also taken up by the Tobacco Board. The Tobacco Institute of India (TII), the Indian Society on Tobacco Science (ISTS) and the Directorate of Tobacco Development (DTD) are promoting tobacco by providing information on production, prices, market, tax rates, government policies, etc. The Ministry of Commerce, Government of India provides assistance for study/business tours, conferences and exhibitions related to tobacco trade.

However, it may be stated here that the developments in tobacco research may help increase the yield, quality and flavour of tobacco, but not the area under tobacco cultivation. Further scope for increasing this area in India is limited because of the peculiar soil conditions and climate required for cultivating tobacco. Moreover, this may not be possible in the light of the growing anti-tobacco movement within the country, the World Health Organization's (WHO) Framework Convention on Tobacco Control (FCTC), World Trade Organization's (WTO) specifications on trade and agriculture and the government's decision to impose restrictions on tobacco consumption in India.

Exports

Tobacco has been a traditional export item for India. However, the share of tobacco exports in India's total exports witnessed a declining trend from 1974–1975 to 2002–2003. The share of tobacco exports to total exports declined from 2.5% in 1974–1975 to 0.4% in 2002–2003. The share in disaggregated forms of unmanufactured and manufactured tobacco also depicted a similar declining trend. The declining share of tobacco exports to total exports is basically due to the sharp fall in the export share of unmanufactured tobacco.

In 1985, India exported unmanufactured tobacco products to nearly 50 countries. Currently, India has tobacco trade with 100 countries. It appears that exports have

Table 2.11 World cigarette consumption (1000 sticks)[45]

	Domestic consumption			Share in world consumption (%)		
	1997–1998	2001–2002 (p)	2002–2003 (f)	1997–1998	2001–2002 (p)	2002–2003 (f)
China	1,666,047	1,697,291	1,722,349	31.3	31.3	34.8
Russia	245,000	375,000	378,000	4.6	6.9	7.6
Japan	336,600	292,046	286,500	6.3	5.4	5.8
Indonesia	199,136	181,958	171,100	3.7	3.4	3.5
Germany	140,630	143,164	142,000	2.6	2.6	2.9
Turkey	109,300	115,500	116,000	2.1	2.1	2.4
Italy	93,536	102,357	106,500	1.8	1.9	2.2
Brazil	97,000	105,500	100,200	1.8	1.9	2.0
Spain	89,900	94,309	94,300	1.7	1.7	1.9
India	96,820	89,455	91,160	1.8	1.7	1.8
Philippines	75,000	84,000	87,100	1.4	1.6	1.8
Others	2,171,899	2,148,548	1,649,591	40.8	39.6	33.4
World total	5,320,868	5,429,128	4,944,800	100	100	100

p: preliminary; f: forecast

Source: United States Department of Agriculture (USDA) estimates for February 2004

determined the production of FCV tobacco in India. In 1982–1983, India made a record production of 184 million kg of FCV tobacco, which was 6% of the world's tobacco production.[53]

The rise in the popularity of cigarettes opened the market for Indian FCV tobacco in the UK, Japan, the USSR, Egypt, Italy, China and Bulgaria. According to data available in 2001, Russia (27%), the UK (10%), Yemen (9%), Germany (8%), the Netherlands (6%) and Belgium (5%) are the major markets for Indian unmanufactured tobacco. Russia, Belgium, Germany, Nepal and Singapore are the major importers of FCV tobacco from India. Of the 200 exporters registered with the Tobacco Board in 2001–2002, there are 50 that export unmanufactured tobacco from India.

Although India is one of the major exporters of unmanufactured tobacco, it has yet to make its presence felt in the export market for cigarettes. From the data on tobacco exports, it is evident that India is known more for its unmanufactured tobacco than for the value-added manufactured products of tobacco. As early as in 1950–1951, 95% of the tobacco exports consisted of unmanufactured tobacco. Even after 90 years of the existence of a domestic cigarette manufacturing industry, India's tobacco exports still continue to be dominated by unmanufactured leaf, which was 84.6% of the total tobacco exported in 2003–2004 (Table 2.12).[51] Nevertheless, due to the global increase in tobacco prices, India's export earnings has gone up by over 58 times from Rs 152 million in the beginning of the 1950s to Rs 8834 million. India's exports of tobacco and its products in terms of volume spurted from 44.6 million kg in 1950–1951 to 115.4 million kg in 2003–2004.

An analysis of variety-wise exports of unmanufactured tobacco shows that FCV tobacco accounted for between 60% and 82% of the total

Table 2.12 Share of export performance of India from 1950–1951 to 2003–2004

	Unmanufactured tobacco		Manufactured tobacco	
Year	Quantity	Value	Quantity	Value
1950–1951	94.6	85.80	5.4	14.20
1955–1956	96.2	90.03	3.8	9.97
1960–1961	96.4	92.82	3.6	7.18
1965–1966	95.5	92.53	4.6	7.47
1970–1971	95.4	96.44	4.6	3.56
1975–1976	94.7	94.64	5.3	5.36
1980–1981	86.4	88.47	13.6	11.53
1985–1986	76.6	81.10	23.4	18.90
1990–1991	84.5	79.32	15.9	20.68
1995–1996	85.8	85.83	14.1	14.17
2000–2001	87.1	74.95	13.3	25.05
2003–2004	84.6	67.86	15.4	32.14

Values are expressed in percentages

Source: Tobacco Board 2004

exports of unmanufactured tobacco from the country during the 1990s. Similarly, the export value of FCV tobacco accounted for 75% to 90% of the total exports of unmanu-factured tobacco. The other varieties of tobacco exported include SCN, SCV, Burley (all cigarette tobaccos) and *Lalchopadia, Judi* and rustica (chewing tobaccos).

India has an advantage over other countries in tobacco price and in the production of various varieties of tobacco from different agro-climatic regions. As a result, Indian tobacco is cheaper in the world market than of other major producers. In spite of India having a comparative advantage over leading tobacco producing countries in terms of low cost of production, farm price and conversion cost, it has not emerged as a leading exporter. This is mainly due to low productivity and quality as compared to Zimbabwe, Brazil, the USA, etc. Table 2.13 shows that there have been fluctuations in tobacco exports from India. Though India has explored new markets, its share in the world market has declined.[54]

The continued accent on tobacco exports, mostly in unmanufactured form, is probably due to the limited scope for tobacco-based products from India. Despite 60 years of international trade, India has failed to take advantage of the worldwide increase in the demand for cigarettes. Exports of tobacco products from India are low. Chewing tobacco with a share of 43.8% leads the exports of tobacco products from the country (Table 2.14).[55] Chewing tobacco is followed by cigarettes (29.7%), *hookah* tobacco paste (12.2%), and *beedis* (11.7%). However, there is not much scope for increasing the exports of manufactured tobacco products except cigarettes, which constitute the most widely used tobacco product in the world. Table 2.14 shows that the share of cigarettes in total manufactured exports increased both in volume and in terms of value from 1995–1996 to 2001–2002. However, the likelihood of the global tobacco market shrinking due to worldwide controls on tobacco and the extremely competitive nature of the global tobacco market would suggest that India's policies on tobacco agriculture and manufacture should not be guided by unrealistic expectations of potential exports.

Table 2.13 India's tobacco exports (in million kg)[55]

Year	Unmanufactured tobacco	Share (%) and rank in world tobacco trade	FCV tobacco	Share (%) and rank in world tobacco trade
1970	48	5% (5th)	48	12% (2nd)
1975	77	6% (4th)	71	13% (2nd)
1980	73	5% (5th)	65	11% (4th)
1985	64	5% (7th)	58	9% (4th)
1990	67	4% (8th)	44	7% (4th)
1995	68	4% (8th)	45	6% (5th)
2000	100	5% (6th)	65	6% (5th)
2001	83	4% (7th)	54	5% (5th)

FCV: flue-cured Virginia

Source: Tobacco Board, 2002

Employment

The structure of employment in the Indian tobacco industry largely reflects the structure of the consumer market for tobacco products in India. Specifically, the effect of the production of *beedis* dominates employment opportunities within the manufacturing sector of the domestic industry as this is a highly labour-intensive activity and involves much less sophisticated manufacturing techniques compared to those employed by cigarette manufacturers.

Within the tobacco industry, there are some important additional characteristics of the structure of employment. The vast majority of positions in the tobacco industry are available either on a part-time or seasonal basis. The main activities in which there is full-time employment are leaf processing, cigarette manufacturing, distribution and retailing. Of course, people involved with the distribution and retailing of tobacco products will derive only part of their livelihoods from the sale of tobacco products.

The manufacture of *beedis* is undertaken by part-time employees only. Seasonal employment dominates in the leaf-growing industry, with relatively small contributions to seasonal employment opportunities also coming from leaf processing and from brokering, auctions and

Table 2.14 Production and exports of tobacco products from India[55] (quantity in tonnes and value in millions and percentage share in total exports)

Tobacco Products	Production						Share in total exports (%)					
	1995–1996		1998–1999		2001–2002		1995–1996		1998–1999		2001–2002	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Cigarettes	884	139	1432	317	2883	849	7.4	233	7.6	184	17.9	297
Beedis	676	115	998	307	961	334	5.7	193	5.3	179	5.9	117
HT paste	9376	261	12,811	366	8910	348	78.9	438	67.6	213	55.4	122
Chewing tobacco/*zarda*	424	61	1191	500	2640	125	3.6	102	6.3	291	16.4	438
Cut tobacco	512	18	2506	225	652	69	4.3	29	13.2	131	4.1	24
Snuff	6	01	19	04	19	05	0.1	01	0.1	2	0.1	s02
Others	5	02	0	0	11	02	0.0	03	0.0	0	0.1	01
Total	11,883	597	18,957	1719	16,076	2857	100	999	100	1000	100	1001

HT: *hookah*/tobacco paste
Source: Tobacco Board 2003

related activities. The magnitude of seasonal employment in leaf growing, where many millions of people are engaged in the industry, emphasizes the importance of the industry in providing an income to these people, and in supporting family members and other people in these regional and rural communities. Other partial employment estimates reinforce the crucial role of the tobacco industry in providing employment opportunities, especially in leaf growing.

The *beedi* industry in India is labour-intensive. Since *beedi* rolling is considered to be largely a cottage industry, it generates much more employment at the manufacturing stage. It is estimated from the Annual Survey of Industries (ASI) data that almost 85% of employees of tobacco manufacturing industries are employed in the *beedi* industry.[46] Except the *beedi* industry, the number of employees in all other sectors of tobacco manufacturing units has declined over the period from 1973–1974 to 1997–1998.

Excise revenue

Taxes on tobacco have long been debated in various countries. In many countries, both *ad valorem* and specific taxes are levied simultaneously on tobacco products. In fact, the structure of taxes on tobacco in India is slightly different. Until 1979, the primary form of taxing tobacco in India was through the levy of a tax on all types of leaf tobacco purchases, including those used for cigarettes, *beedis, zarda* and snuff. In addition, an excise duty was levied on finished products. In that year, the government abolished the levy on leaf tobacco because (i) many people thought it was a tax on the poor farmers (producers) as well as an instrument for harassing them in the name of tax compliance, and (ii) it was becoming administratively difficult to collect the tax. Consequently, the entire tax burden was shifted to the finished products.

The tobacco industry in India is subject to a range of taxes imposed by the Central and State Governments. The Union government raises revenue from the sales of all types of tobacco products predominantly through the imposition of excise duty calculated on an ex-factory basis. These are detailed in Section 6.8.

During 1998–1999, Rs 532,460 million was collected by the Indian Government from excise tax. The total excise duty generated by tobacco products was Rs 57,680 million which is 10.8% of the total excise revenue collected. Tobacco excise has become a particularly important source of revenue for the national budget. The data on revenue from excise duty highlights the preferential treatment accorded to the unmanufactured tobacco sector through the imposition of a lower excise on traditional tobacco products than that imposed on manufactured products. A recent study of the Indian tobacco industry concluded that traditional tobacco products, such as *beedis*, chewing tobacco and smokeless tobacco,

account for 81% of the national consumer market and yet they comprise only 12% of the total tobacco excise collected from tobacco products.[56]

However, the contribution of tobacco to the excise revenue has reduced from 14% in 1960–1961 to 10.8% in 1998–1999. The slowdown in the share of excise revenue is partly due to the nature of the tobacco consumption pattern in India and partly due to the excise rates over time. The bulk of tobacco consumption in India is in traditional forms such as *beedis* and chewing and non-smoking products, whereas the excise revenue from tobacco is largely dependent on cigarettes, which account for one-fifth of consumption but contributes nearly four-fifths of the excise revenue.

Irrespective of the large contribution of cigarette industries to excise revenue, it has shown an increasing trend of profit. The profit of cigarettes and cigarette products industries reached 78.2% of the total profit of all tobacco industries in 1997–1998 from 61.2% in 1979–1980.[46] Similarly, the profit share of *paan masala* and catechu industry has also increased substantially over the years. However, the profit margin of the *beedi* industry is declining over the years.

2.2 ECONOMIC HISTORY OF TOBACCO PRODUCTION

KEY MESSAGES

- The entry of European colonial powers into India spurred the import of tobacco into India. Investement in production and export came later during the British rule.
- The policies of strong governmental support for tobacco agriculture, initiated during the British colonial rule, have continued after Independence.
- Though recognized as a demerit good, tobacco plays a significant role in the Indian economy as it contributes substantially in terms of excise revenue, export revenue and employment.
- Tobacco cultivation has sustained despite social disapproval because of domestic demand (*beedi* tobacco) and international market (flue-cured Virginia tobacco).
- The Tobacco Board, agricultural research institutes and the tobacco industry are the promoters of tobacco cultivation in India.
- Tobacco has emerged as a major producer and exporter from a mere importer some fifty years back.
- India is the world's second largest producer of tobacco and also the second largest consumer of unmanufactured tobacco. It is a major exporter of unmanufactured tobacco.
- From a leaf used initially as a medicine and intoxicant, tobacco has become a golden leaf reaping money for the producer and government.
- In sharp contrast to other countries, major forms of tobacco consumption in India are *beedis* and chewing tobacco.
- Cigarettes, which are the major consumption category in other parts of the world, occupy the third place in India. The cigarette sector, however, has shown a rising profit trend.
- The export potential of tobacco is shrinking and domestic consumption too appears to be responding to interventions related to tobacco control.
- The need to restrict the growth of the tobacco industry and to progressively replace tobacco with alternative crops must receive serious policy consideration.

2.3

Sociocultural Aspects of Tobacco Use

The advent of tobacco in the early seventeenth century in India evoked mixed responses from a traditional society. While the curiosity to experiment with a novel product aroused interest in its use, the taboos that forbade the use of a culturally alien and potentially noxious substance resisted its acceptance among many sections of the people. The widespread uptake of the tobacco habit over the next four centuries represented a victory for commercial forces which aggressively created a mass market through engineered addiction. There was also a complex interplay of sociocultural factors which influenced not only the acceptance or rejection of tobacco by sections of society but also determined the patterns of use. Some of these factors, especially the ethnographic features, are described in this section. Others, such as the effect of education and socioeconomic status on tobacco use, are discussed elsewhere in this report.

Tobacco as a system of relations

One aspect common to all forms of tobacco consumption across all societies is the infusion of symbolic and often moral overtones. Just as the symbolic nature of consumption is not identical among different individuals, groups or cultures, similarly the morality intrinsic to tobacco consumption varies. Even the most private, individual act of consumption has social and cultural aspects. This section examines the symbolic aspect of tobacco consumption, or the meanings and codes underlying its use.

The acceptance or rejection of tobacco consumption as a practice must be viewed in the context of the Indian value system which has traditionally emphasized social hierarchies based on factors such as age, gender, caste, wealth, education, professional standing or celebrity status. The use of psychotropic drugs is set in an atmosphere of social values and expectations. The drug may be used to improve social relationships by bringing an individual's behaviour in line with an ideal of 'normal' behaviour. However, a critical aspect of tobacco consumption is that normality is not uniform over different social settings or groups. For example, in a traditional family setting, smoking may be perceived as illicit, immoral or 'bad'. To smoke in such an atmosphere would be to deviate from the norm. However, the same individual, when with friends in a pub, may smoke to keep to the norm.

Patently, sociocultural factors are crucial in determining who consumes tobacco, when, where, how and why. Furthermore, the consumption of tobacco has a symbolic aspect that must be explored in terms of the individual's lifestyle, self-image and social relationships. For instance, a younger person putting out a cigarette on seeing a senior is understood (conveyed and received) as a mark of respect and modesty. The gesture communicates that juniors are expected to behave in a certain way in the presence of seniors. It is accepted that comportment is arranged on the axis of authority by age and kinship. In this example are conflated both the manner of consumption of tobacco as well as authority structures.

In traditional Indian joint family structures, smoking at home was initially taboo. Later, as the addictive nature of tobacco compelled the user to smoke frequently, the use of tobacco at home became more common. Here too, it was restricted to the dominant male members of the family. The younger members of the family would desist from using it in the presence of the elders and even the 'master of the house' would not use it when an elderly relative, especially an aged parent, was around. The conviviality of members of different generations smoking together, in a home setting, is rare even today,

through modernity has led to some relaxation of these rules. The increasing replacement of the joint family by nuclear families, especially in the urban setting, has provided a more permissive atmosphere to use tobacco at home.

Ritual aspects of tobacco use

Tobacco use, though perceived as an individual habit, often acquires a ritualistic character involving group behaviour. This is true of India, in both rural and urban settings.

An emphatic example of the ritual aspect of tobacco consumption would be the use of the *hookah*. The habit of rural north Indian men, usually assembled in caste-based or social class-based groups, sharing a *hookah* in daily gatherings, is a common example of fellowship, solidarity and consultative process. In some areas, this extends to the women too. In the Nindana village in Haryana, for example, women go out in groups to fetch water late in the afternoon. During this time, away from the men and the immediacy of household responsibilities, they settle down for gossip, rest and the commensality and community of the *hookah*.[57]

In urban cultures, young professionals (who have their own 'yuppie culture') are often characterized by specific rituals of bonding and sharing. These include visiting pubs, meeting particular groups of friends, sharing a few drinks and smokes, and generally unwinding. Such rituals, for example, have become part of the group identity of young professionals from the information technology industry which is burgeoning in India.

Similarly, a prohibition of certain caste groups from sharing a *hookah*, or a proscription of women from tobacco use in traditional Indian contexts further illustrates the establishment of ritual or social superiority through the manipulation and control of objects of material culture. The consumption of tobacco and thereby construction of a certain kind of community identity can be found in the consumption behaviour of the Muria Gonds of the north-central part of Bastar district in Madhya Pradesh.[58] For them, consumption is basically a demonstration of the ability to come up to the collective mark, be it in case of fashion, jewellery, or display on social occasions. In this case, therefore, the construction of identity through consumption is not to be different, but to be same. Hence, both men and women consume tobacco and alcohol, not as a mark of distinction, or indulgence, but as a part of the Muria tradition of commensality. Furthermore, borrowing from Douglas and Isherwood's notion of code, it becomes evident that Muria only accept those goods to which they can relate and thereby assign certain values that form a part of Muria Weltanschauung. Therefore, while they consider tobacco leaf as a precious item, they reject cigarettes, which are more popular among the local Hindus and project a modern image.

The above example implies that as the process of consumption is a social phenomenon, the consumption of tobacco is not devoid of it. The idea of smoking a cigarette or chewing tobacco, to project a certain kind of identity, however depends upon the culture to which one belongs. Hence, in one situation it may be an act of rebellion against the traditional notions of morality, while in another situation, it is an act of conformity. The diversity of Indian society and the complexity of its social evolution have seen the use of tobacco symbolizing both of these, in different social and temporal settings.

Tobacco consumption and social status

Status is constituted through power, prestige and wealth and maintained by shared cultural practices in terms of material culture, possession of wealth and acquisition of the paraphernalia required to display status (wherein wealth is the underlying precondition). Having tobacco and a *hookah* is one thing; however, being surrounded by a group of men and having someone to fill and light it to be shared by the

group, is quite another. This, in turn, is likely to create, enhance or maintain one's prestige and ability to exercise power over others, especially other groups. This was typical of the rural Indian scene, where the large farm owners or former zamindars had stylistic and ritualistic methods of tobacco consumption. In that feudal set up, the power of being served extended to the privilege of the serfs or bonded men offering and refilling tobacco to the master and his friends. Such traditions continue to linger in rural areas, as evidence of persisting social inequality.

Commensality, is an act of solidarity and, in India, where there are ritual rules around eating and drinking, commensality acquires an even more significant hue.[59] Such being the case, the consumption of tobacco then acquires a whole range of symbolic connotations. Louis Dumont, when referring to the notion of pollution and purity, avers that sharing of pipe among individuals depends upon the caste (or subcaste) to which one belongs.[60] According to him, ranking of castes includes the notion of contact and is therefore based on certain criteria; one of them is that of sharing of a pipe, which he equates to that of acceptance of water from only certain castes. Citing the example of the Uttar Pradesh region, he states that men smoke only with the members of their own caste.

Adrian Mayer's study of a village in Southern Malwa, in Central India, elaborates how among the 23 castes in this village, sharing of the same pipe defines, along with other rules of commensality such as food and water, their ranking.[61] Therefore, higher castes share the pipe with almost all castes, apart from the 'untouchables', such as weavers, tanners, sweepers and so on. Among these socially discriminated groups as well, there are well-defined rules regarding with whom one can smoke a pipe. So while on the one hand, individuals become a part of an 'in-group' by coming together on various occasions to smoke a pipe as a sign of brotherhood, on the other, they also define the 'out-group' with whom they cannot do the same. Even if different caste members sit together to smoke a common pipe, distinct caste status is maintained wherein a separate cloth is used by each individual to cover the mouthpiece. In fact, Dumont also points out that in the case of south Indians, who are even more conservative about the caste rules, even this sharing of the tobacco pipe with other castes cannot be conceived of. When it is only with people of one's own caste that one believes in sharing of the pipe, it establishes as well as maintains caste solidarity and caste differentiation.

The inclusionary aspect of tobacco use may be most clearly depicted through the exclusionary aspect, clearly exemplified in the statement of '*hookah–pani band*' (temporary exclusion). Literally, this means stopping of *hookah* and water, i.e. barring someone from sharing social life with other equals. In most cases, this implies designating a person—and his family—as an outcaste, by refusing to share a *hookah* with him or accepting or giving him water. Consequently, the commensual aspect, not only of tobacco, but also of village life, is denied to him and his family.[62] They are, effectively, excommunicated. J.H. Hutton equates the cessation of commensality, which includes prohibition of pipe and water, upon an individual, to cessation of the specialized services provided by that individual.[63] However, Dube mentions that there has been a weakening of commensal rules.[64] Ostracism or excommunication from one's caste is rarely affected these days if commensal restrictions are broken.

Inclusion and exclusion of individuals or castes, communities or classes from shared consumption, be it smoking, drinking or eating together, act to maintain equality or inequality. Tobacco has been a consumption good consistently associated with this kind of symbolic value. During the heyday of caste-based discrimination, Dalits who were designated as 'low caste' persons by the socially dominant caste groups were not allowed to smoke in the presence of a 'high caste' person. They, therefore consumed tobacco only in the privacy of their homes or in the presence of members of their own caste. As Dalits liberated themselves from

social oppression and began to assert their equality, they began to smoke openly in front of other caste groups.

Tobacco consumption and gender

Across the world, more and more women are taking to tobacco. In India, while the number of women using tobacco may be a small fraction of the total, it is nevertheless a large absolute number. The use of tobacco by women is often considered, by different sections of society, in different ways from that of men.

Till quite recently tobacco use among women was rare, especially in traditional households. Though rural women consumed tobacco, in some parts of India, tobacco use was by women not socially sanctioned. Even in the early decades after Independence, Indian films portrayed the occasional women smoker only in the role of vamp or 'bad woman'. However, advertising and alternate image creation by the tobacco industry has, in recent years, changed those perceptions among sections of the urban women.

For example, among urban women, smoking is now more often seen as a symbol of the emancipated, 'modern' woman. Amos suggests that two images, that of the woman smoker and the emancipated woman, have been linked in popular perception through advertising.[65] She states that while smoking among women has declined in many developing countries, she predicts an increase in smoking rates in developing regions as women achieve greater spending power, and sociocultural and religious constraints decrease. Such a picture is currently emerging in urban India.

Smoking habits, which might have their origins in rebellion, or the thrill of illicit experimentation, become linked with freedom, equality and the overcoming of subjection. In many cases, smoking is a defiant act, a rejection of cultural restraints and an affirmation of a woman's identity as a free person with control over her decisions.

Further, women and men smokers are viewed differently. In most cases, male smokers do not evoke specific comment. Smoking is acceptable, seen as 'normal' and therefore not something that specifically strikes the eye. Women smokers, however, do get noticed and are viewed in different ways. From overwhelmingly negative perceptions of women smokers as 'loose women', the associations are changing to a 'cool' or 'modern' image as educated young women and

Box 2.5 Women as generators of 'tobacco water'

In the traditional Mizo society, in northeast India, tobacco and women have been associated as part of a social custom which requires the housewife to serve 'tobacco water' to the husband as well as to visitors.

Tobacco water has been in use since the nineteenth century; definite recording of use is available since 1907. Men and women alike sip tobacco water although in the past it was said to be predominantly used by women.

Traditionally, tobacco water was offered to guests/ visitors both at family and social levels and it was considered very rude to omit this greeting. Tobacco water was one of the essential items especially in rural parties. A family generally owned three tobacco water flasks, one carried by the husband, one by the wife and a spare one kept in the house. No grown man or woman went around without a flask. This was common feature among the Lakhers (tribal community in Mizoram) in both urban and rural areas. Men as well as women smoke tobacco using different types of pipes (vaibel and tuibur, respectively).The tuibur has a water receptacle, through which smoke is drawn. The nicotine-rich 'tobacco water' that remains in the bowl after a woman smokes her pipe is used as a favoured beverage to serve family members and visitors. The women are, therefore, expected to smoke frequently and produce sufficient quantities of the tobacco water. This is stored in a hollow gourd and offered as sips to others.

The reputation of a woman as a housewife and as a hostess is often dependent on her ability to serve adequate amounts of nicotine water. During the process of courting, the girl offers tobacco water to the boy. If the boy refuses, it is understood that he has no interest in the girl.[89]

Indeed, the ability of a young woman to make and serve tobacco water has been an important criterion during bride selection. For that reason, even young girls are taught to smoke to attain a desired level of proficiency in making and serving tobacco water. Education among the Mizos, now a highly literate society, and the commercial availability of bottled tobacco water are making this custom less common now.

attractive models 'light up'. Women smokers view other women smokers as part of a sisterhood of sorts, as 'someone like me'. This suggests the creation of a particular group identity around smokers, not just as a group who share a common activity, but also in terms of a small subgroup, that of women smokers. This group is always aware of itself and its tenuous identity.

The cultural baggage associated with tobacco use also tends to affect where and when women use it. Most women smokers tend to smoke in atmospheres in which they feel 'safe', in pubs, in zenana areas (where only women are permitted), among friends, in anonymous surroundings. For example, smoking is usually avoided in front of the family, elders, or in areas where it may invite comment. On the contrary, some women smokers make a defiant point of lighting up wherever and whenever they feel like, as an expression of their independent self-identity.

The rules are a little less stringent for smokeless tobacco, perhaps because it is relatively odourless and less perceptible, less stigmatized for women and easier to conceal. Tobacco use, which among younger groups and women is nearly always a covert activity, is in its smokeless form rendered even more covert by the very nature of smokeless tobacco. These factors, perhaps, contribute to the greater use of smokeless tobacco by women.

The betel leaf is a particularly acceptable vehicle for tobacco consumption. The advent of *paan masala* as a readily edible powder, sold in conveniently sized sachets, has made it especially easy for the addition of tobacco. Many women, even in traditional middle class households, became quickly habituated to consuming *paan masala* and some of them also made the transition to the tobacco-added form. Carrying a *paan masala* tin has even become a status symbol, and offering *paan masala* is accepted as implying hospitality and equality.

The availability of *gutka* has also made it easier for women to chew tobacco without attracting social sanction.

For many years in Indian society, the reference point for evolving social norms, for both women and young persons, remains the image of the dominant adult male. So long as tobacco use was seen as a pattern of acceptable or even desirable male behaviour, the urge to attain the same social status made tobacco use attractive to women as well as to young persons. Whether as a symbol of emulation or as a gesture of rebellion, tobacco use became associated with gaining or challenging the power status of the adult male. Such images have been cleverly exploited by the tobacco industry to gain customers among new target groups such as women and children.

Changing mores and values

Values, which influence conduct, change over time as the social milieu is re-configured by social, economic and cultural shifts that occur over time, both within and across societies. This holds true of tobacco consumption as well. As traditional values slacken their stranglehold in rural societies and are rapidly substituted by increasingly modern codes of behaviour in urban societies, the sociocultural influences that encourage or discourage tobacco use are altering. These require to be studied and tracked by advocates of tobacco control who must not only identify but also influence these processes to curb tobacco consumption. Otherwise, they would leave the field open to the tobacco industry which avidly studies these sociocultural indicators and their determinants to manipulate them to its advantage. The paucity of studies in this area is a cause for concern but should also be stimulus for concerted action by social scientists and health professionals.

2.3 SOCIOCULTURAL ASPECTS OF TOBACCO USE

KEY MESSAGES

- Historically, tobacco consumption has been linked with social status and commensality.
- Tobacco consumption is associated with different symbolic and often moral overtones across all societies.
- The habit of rural men, usually assembled in caste-based or social class-based groups, sharing a *hookah* in daily gatherings, is an example of fellowship, solidarity and the consultative process.
- The use of tobacco by women is often considered, by different sections of society, in different ways from that of men. Among urban women, smoking is often seen as a symbol of emancipation and modernity.
- Smoking habits, which might have their origins in rebellion or the thrill of illicit experimentation, have become linked with freedom and equality among those who have suffered social or gender inequality.
- The greater use of smokeless tobacco by women is associated with less stigma compared to smoking.
- As traditional values slacken their stranglehold in rural societies and are rapidly substituted by modern codes of behaviour in urban societies, the sociocultural influences that encourage or discourage tobacco use are altering. These need to be studied carefully to control tobacco consumption.

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3

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Appendix Chemistry and Toxicology of Tobacco Products Used in India 73

In this chapter, an attempt is made to understand the magnitude of the problem of tobacco use in India in qualitative as well as quantitative terms. This would require focus on two aspects—the types of tobacco used in India and the actual prevalence of the different types of tobacco used by the population.

In India, tobacco is used in a wide variety of ways: smoking, chewing, applying, sucking, gargling, etc. For each type of tobacco use, a wide range of tobacco products may be available. Some of these products are industrially manufactured on a large scale, some locally on a small scale, some may be prepared by a vendor and some may be prepared by the user himself or herself. Newer imperishable forms of tobacco with areca nut have become very popular and the industry has grown phenomenally within a few decades. *Beedi* smoking is the most popular form of smoking, while cigarettes form a major tobacco industry.

While looking at the prevalence of tobacco use in the population, the pattern among specific subgroups would be of special interest. In almost every study, tobacco use was found to be higher in the lower socioeconomic groups and that aspect has been dealt with in Section 7.6. Subgroups that are dealt with in this chapter are: rural–urban, geographic areas, occupational groups, etc. Many surveys on tobacco use have

been carried out in specific areas—almost everywhere tobacco use is quite prevalent, especially among men. Two specific population groups—youth and women—are given special attention. On the basis of studies that provide the prevalence of tobacco use for the entire country, the number of tobacco users has been estimated for India. The scientific reasons for the harmful effects of tobacco are briefly discussed in terms of its toxic constituents.

3.1

Tobacco Use Practices

Tobacco smoking

Tobacco smoking has been in vogue for hundreds of years. With the spread of tobacco to Europe and other parts of the world from the sixteenth century, tobacco smoking soon gained popularity in India.[1] Tobacco can be smoked in a wide variety of ways.

Beedis

Beedis are the most popular smoking form of tobacco in India. Thirty-four per cent of the tobacco produced in India is used for making *beedis*. *Beedis* are puffed more frequently than cigarettes to prevent them from going out. *Beedis* are made by rolling a dried, rectangular piece of *tendu* leaf with 0.15–0.25 g of sun-dried, flaked tobacco.[2]

Cigarettes

Cigarette smoking is the second most popular smoking form of tobacco used in India after *beedis*. In India, cigarette use seems to be confined to the use of manufactured cigarettes; there are no reports on the use of roll-your-own cigarettes. The prevalence varies greatly among different geographic areas and subgroups such as rural–urban.

Cigars

Cigars are made of air-cured, fermented tobacco, usually in factories, and are generally expensive. Cigar smoking is predominantly an urban practice.

Cheroots

A *cheroot* is a roll made from tobacco leaves.

Chuttas

Chuttas are coarsely prepared *cheroots*. They are usually the products of cottage and small-scale industry, or are made at home. Nearly 9% of the tobacco produced in India is used for making *chuttas*. It is estimated that about 3000 million pieces of *chuttas* are made annually in India. *Chutta* smoking is widespread in the coastal areas of Andhra Pradesh, Tamil Nadu and Orissa.

Reverse *chutta* smoking

The term 'reverse smoking' is used to describe smoking while keeping the glowing end of the tobacco product inside the mouth. Reverse *chutta* smoking is practised extensively by women in the rural areas of Visakhapatnam and the Srikakulam district of Andhra Pradesh. In the Srikakulam district, 46% of the 10,169 individuals surveyed smoked reverse and this practice was more common among women (62%) than men (38%).[3]

Dhumti

Unlike *beedis* and *chuttas*, *dhumtis* are not available from vendors but are prepared by the smokers themselves. *Dhumti* is a kind of a conical cigar made by rolling tobacco leaf in the leaf of another plant. In a random sample of about 5400 villagers in Goa, 4% were *dhumti* smokers.[4]

Reverse *dhumti* smoking

Dhumtis may be occasionally smoked with the lighted end inside the mouth. The overall prevalence of this form of smoking is 0.5% in Goa.[4]

Pipe

Pipe smoking is one of the oldest forms of tobacco use. The different kinds of pipes used for smoking range from the small-stemmed European types made of wood to long-stemmed pipes made from metal or other material.

Hooklis

Hooklis are clay pipes commonly used in western India. Once the pipe is lit, it is smoked intermittently. On an average, 15 g of tobacco is smoked daily. *Hookli* smoking was practised by 11% of the 5227 men studied in the Bhavnagar district of Gujarat.[5]

Chillum

Chillum smoking is an exclusively male practice; it is limited to the northern states of India, predominantly in rural areas. *Chillum* is a straight, conical pipe made of clay, 10–14 cm long, held vertically. In a survey on 35,000 individuals in the Mainpuri district of Uttar Pradesh, 28% of the villagers were found to be *chillum* smokers. *Chillum* smoking requires a deep pulmonary effort. Often, one *chillum* is shared by a group. They are made locally, are inexpensive and easily available. *Chillum* probably predates the introduction of tobacco to India and was used for smoking opium and other narcotics.[6]

Hookah

The *hookah* is an Indian water pipe in which the tobacco smoke passes through water before inhalation.

In a random sample of 4859 men and 5481 women from the Darbhanga district of Bihar, 2% and 28%, respectively, reported smoking the *hookah*.[5] The reason given for this female predominance is that it is inconvenient for men to carry a *hookah*, whereas women remain at home most of the time. There has been a considerable fall in the reported consumption of *hookah* tobacco. *Hookah* smoking thus appears to be on the decline in India.[1]

Non-tobacco smoking products

Non-tobacco smoking products are also available. An herbal cigarette (brand name *Nirdosh*) has been available for a long time. Recently a herbal *beedi* (brand name *Vardaan*) has been launched. Ostensibly, these products are marketed as aids to smoking cessation. No scientific evaluations have been carried out and little is known about their efficacy.

Smokeless forms of tobacco

The term 'smokeless tobacco' is used to describe tobacco that is consumed without heating or burning at the time of use. Smokeless tobacco can be used orally or nasally. For nasal use, a small quantity of very fine tobacco powder mixed with aromatic substances called dry snuff is inhaled nasally. This form of smokeless tobacco use, although still practised, is not very common in India. No scientific report is available in the literature and therefore nasal inhalation of snuff will not be further dealt with in this chapter.

The oral use of smokeless tobacco is widely prevalent in India; the different methods of consumption include chewing, sucking and applying tobacco preparations to the teeth and gums. Smokeless tobacco products are often made at home but are also manufactured. Recently, a variety of smokeless tobacco products have been produced industrially on a large scale, commercially marketed and are available in small plastic and aluminium foil packets.

Paan (betel quid) with tobacco

Paan chewing, or betel quid chewing, is often erroneously referred to as 'betel nut chewing'. *Paan* consists of four main ingredients—betel leaf (*Piper betle*), areca nut (*Areca catechu*), slaked lime [$Ca(OH_2)$] and catechu (*Acacia catechu*). Betel leaves contain volatile oils such as eugenol and terpenes, nitrates and small quantities of sugar, starch, tannin and several other substances.[7] Condiments and sweetening agents may be added as per regional practices and individual preferences. Some time after its

introduction, tobacco became an important constituent of *paan*, and currently most habitual *paan* chewers include tobacco.

Tobacco is the most important ingredient of *paan* for regular users. It is used in the raw state (as in Kerala) as well as after processing. Processing, additives and names differ from place to place. Tobacco is referred to as *kaddipudi* and *hogesoppu* in Karnataka, *kadapan* in Orissa and West Bengal, and *pattiwala* in Uttar Pradesh. *Zarda* and *kiwam* are commercially manufactured varieties often used as ingredients in *paan*.

Paan masala

Paan masala is a commercial preparation containing areca nut, slaked lime, catechu and condiments, with or without powdered tobacco. *Paan masala* contains almost all the ingredients that go into the making of a *paan*, but are dehydrated so that the final product is not perishable. It comes in attractive sachets and tins, which can be stored and carried conveniently. *Paan masala* is very popular in urban areas and is fast becoming popular in rural areas. Although the actual prevalence of this practice is not known, its popularity can be gauged by the production figures: according to commercial estimates, the Indian market for *paan masala* is now worth several hundred million US dollars.

Tobacco, areca nut and slaked lime preparations

Combinations of tobacco, areca nut and slaked lime are chewed in several regions of north India, where they are known by different names.

Mainpuri tobacco

In the Mainpuri district of Uttar Pradesh and nearby areas, this preparation is very popular. It contains mainly tobacco with slaked lime, finely cut areca nut, camphor and cloves. In a study of 35,000 individuals in Mainpuri, 7% of the villagers used this product.[6]

Mawa

This preparation contains thin shavings of areca nut with the addition of some tobacco and slaked lime. Its use is becoming popular in Gujarat, especially among the youth. *Mawa* use is also prevalent in other regions of the country. The prevalence of *mawa* chewing has increased tremendously in recent years. Its magnitude can be assessed from the fact that the Bhavnagar city administration appealed to the people not to litter the streets with the cellophane wrappers of *mawa*, as they clogged the city drains!

Tobacco and slaked lime (*khaini*)

Use of a mixture of sun-dried tobacco and slaked lime, known in some areas as *khaini*, is widespread in Maharashtra and several states of north India. A regular *khaini* user may carry a double-ended metal container, one side of which is filled with tobacco and the other with slightly moistened slaked lime. A small quantity of tobacco is taken in the palm and a little slaked lime is added. The ingredients are then mixed vigorously with the thumb and placed in the mouth. In Maharashtra and Gujarat, *khaini* is placed in the premolar region of the mandibular groove, whereas in Bihar and Uttar Pradesh, it is generally held in the lower labial groove. In the Singhbhum district of Bihar, this product is often kept on the dorsum of the tongue. In a study of over 100,000 villagers in Pune, Maharashtra, 28% used tobacco–slaked lime; the practice was more common among men (52%) than women (10%). In the Singhbhum and Darbhanga districts of Bihar, 27% and 44% of the 4800 and 4856 men, respectively, used *khaini* and of the 5248 and 5481 women, 10% and 7%, respectively, used *khaini*.[8]

Chewing tobacco

Small pieces of raw or commercially available finely cut tobacco are used for this purpose.

Chewing of tobacco alone, however, does not appear to be very common in India. Among the 10,000 dental outpatients in Lucknow, Uttar Pradesh, and 57,000 industrial workers in Ahmedabad, Gujarat, 2.1% and 2.6% chewed tobacco alone, respectively.[9,10]

Snus

Swedish snuff called *snus* is available in teabag-like pouches. The pouch can be kept in the buccal or labial groove and sucked. It is marketed in India by the Swedish Match Company under the brand name Click.

Tobacco products for application

Several smokeless tobacco preparations such as *mishri, gudhaku, bajjar* and creamy snuff, are intended primarily for cleaning the teeth. Such use, however, soon becomes an addiction. In India, there is a widespread misconception that tobacco is good for the teeth. Many companies take advantage of this misconception by packaging and positioning their products as dental care products without explicitly stating so. The reason is that by law, oral care products cannot contain tobacco. The law is not strictly enforced and some oral care products may still contain tobacco.

Mishri

Mishri is a roasted, powdered preparation made by baking tobacco on a hot metal plate until it is uniformly black. Women, who use it to clean their teeth initially, soon apply *mishri* several times a day. This practice is common in Maharashtra. In a survey of 100,000 individuals in a rural area, 22% were *mishri* users; the prevalence was 39% among women and 0.8% among men.[8] *Mishri* use is also prevalent in Goa.

Gul

Gul is a pyrolysed tobacco product. It is marketed under different brand names in small tin cans and used as a dentifrice in the eastern part of India. In the Global Youth Tobacco Survey (GYTS), *gul* use was reported by 6% in Bihar, 3% each in Arunachal Pradesh and Nagaland, 2% each in Assam, UP and Uttaranchal.[2,5] In similar surveys of school personnel in several northeastern states of India, female school personnel reported significantly higher *gul* use than males; Assam (13.5% vs 0.1%), Meghalaya (25% vs 1.9%), Nagaland (6.2% vs 1.4%) and Sikkim (46.5% vs 3.9%).[11,12]

Bajjar

Bajjar is dry snuff (also known as *tapkeer)* applied commonly by women in Gujarat on the teeth and gums. In a survey of 4844 women in Bhavnagar district, 14% reported using *bajjar*.[4]

Lal dantmanjan

Lal dantmanjan is a dentifrice; a red-coloured tooth powder. Traditionally, it contained tobacco but after the passage of a law banning the use of tobacco in dental care products, the listing of tobacco as an ingredient was stopped. A laboratory test of five samples of red tooth powder that did not declare tobacco as an ingredient found a tobacco content of 9.3–248 mg per gram of tooth powder.[12] The GYTS, which focuses on school students in the age group of 13–15 years, found the prevalence to be 49% in Bihar, 29% each in UP and Uttaranchal, 25% in Orissa, 9% in Mizoram, 5% in Nagaland, 4% each in Arunachal, Assam and Meghalaya, 3% in Tripura, and 2% each in Goa, Maharashtra, Manipur and Sikkim.[12]

Gudhaku

Gudhaku is a paste made of tobacco and molasses. It is available commercially and is carried in a metal container but can be made by the users themselves. It is commonly used in Bihar, Orissa, Uttar Pradesh and Uttaranchal. *Gudhaku* is applied to the teeth and gums, predominantly by women. In the GYTS, the prevalence in these states ranged from 4% to

16%.[10,11] In a survey in the Singhbhum district of Bihar, 1% of men and 16% of women used *gudhaku*.[5]

Creamy snuff

Commercial preparations of tobacco paste are marketed in toothpaste-like tubes. They are advertised as possessing anti-bacterial activity and being good for the gums and teeth. These products are thus used like regular toothpaste, but users soon become addicted. This practice seems popular with children in Goa.[13]

Tobacco water

Tobacco water (known as *tuibur* in Mizoram and *hidakphu* in Manipur) is manufactured by passing tobacco smoke through water. Its use was reported by 872 persons (7.2%) among the 12,185 adults surveyed in the Aizawl district of Mizoram and 139 persons (6.5%) among the 2137 adults surveyed in the Churchandpur district of Manipur; use was similar among males and females. The frequency of tobacco water use varied from 1–30 times/day; in Aizawl and Churchandpur districts, 36.7% and 92.1% reported being frequent tobacco water users (more than five times a day), respectively.[14]

Nicotine chewing gum

Nicotine chewing gum containing 2% nicotine (brand name *good-kha*) has been launched as a help for tobacco cessation. For chewers, it is available in *gutka* flavour and for smokers, in mint flavour.

Areca nut preparations

Some areca nut preparations are chewed without the inclusion of tobacco, but this practice may be present concurrently with the use of smokeless tobacco or tobacco smoking. Alkaloids present in areca nut are known to give rise to carcinogenic nitrosamines and areca nut has recently been evaluated as a human carcinogen by the World Health Organization (WHO).[15] The use of areca nut by itself appears to be mildly addictive but when used with tobacco, the effect multiplies manifold. Chewing of areca nut products is very common in India; therefore, a brief resume of these products is included here.

Areca nut

In addition to being an ingredient of *paan*, occasional chewing of areca nut (usually processed) alone is quite common in India, but habitual chewing is comparatively rare. Exclusive areca nut chewing was observed in 2% of 100,000 villagers in Maharashtra.[8] In other rural areas of India also, areca nut chewing was reported to a limited extent. In Assam, a fermented form of areca nut, known as *tamol* or *bura tamol*, is chewed extensively. This is prepared by preserving raw areca nuts together with areca leaves in an underground pit with an inner lining of straw for four months. *Bura tamol* is often infected with fungus. This product contains high levels of arecoline.

Supari

Areca nut is known as *supari* in several parts of north India. Some commercial *supari* preparations are made by cutting dried areca nuts into bits and roasting them in fat to which flavouring, sweetening agents and condiments are added. *Supari* is marketed in attractive aluminium foil packs, in tins and in simple paper packets. Offering *supari* to guests, especially after meals, is a prevalent and well-accepted social custom.

Meetha mawa

Meetha (sweet) *mawa* consists of thin shavings of areca nut, grated coconut, dried fruits and other sweetening agents. It is used commonly in Gujarat and similar preparations with different names are used widely in other regions.

Paan without tobacco

Occasional *paan* chewers generally prefer *paan* without tobacco. Chewing *paan* without tobacco, known as *tambula* in Sanskrit, is an ancient practice in India. Areca nut is an indispensable ingredient of *paan*. In addition, a wide range of chewing products including a chewing gum that may not contain either areca nut or tobacco but contains strong betel quid flavours is available in the market.

3.1 TOBACCO USE PRACTICES

KEY MESSAGES

- In India, *beedi* smoking is the most popular form of tobacco smoking.
- *Paan* with tobacco is the major chewing form of tobacco.
- Cigarette smoking is the second most popular form of tobacco smoking.
- Dry tobacco–areca nut preparations such as *paan masala*, *gutka* and *mawa* are also popular and highly addictive.
- Tobacco dentifrice is popular, especially in some areas and children also use it.

3.2

Prevalence of Tobacco Use

Surveys conducted with the objective of providing the prevalence of tobacco use are rare in India. Population-based surveys in limited areas conducted to study risk factors for various diseases and mortality have reported information on tobacco use. Additionally, three major national surveys have collected limited tobacco use information. This section presents the prevalence and trends of tobacco use from some of these studies, mostly on populations 15 years of age and above.

Local studies

The most detailed tobacco use information comes from large local surveys (5000–200,000 respondents). Cross-sectional surveys on heart disease in local communities have mainly collected smoking information (1000–2000 respondents), as have surveys on lung diseases (300–15,000 respondents). Studies on lifestyle-related factors and drug abuse also report on smoking and sometimes on all forms of tobacco use (n=100–25,000). The age groups covered by the various types of studies are diverse and since tobacco use varies greatly with age, comparison is problematic.

In Delhi, a city with a diverse population, two large sample surveys were conducted, one in 1985–1986 and the other in 1992, intended to be representative of the city. In the first, with 14,770 persons in the age group of 25–64 years, smoking prevalence among men was 45% and among women it was 7%.[16] In the second (10,312 persons, 10 years of age and above), 27.7% of males and 2.7% of females were smokers.[17] The lower prevalence reported from the second survey could be in part due to the inclusion of children in the survey. In the rural part of Delhi, in a small study conducted in the 1960s, 63.5% of males aged 25 years and above were smokers.[18]

Data collected in small surveys in Uttar Pradesh show a high tobacco use, smoking being more popular than chewing. In the Sentinel Survey of individuals 10 years and above in rural Uttar Pradesh (Allahabad, Bijnor and Mainpuri districts), 51% of males were tobacco users (28.2% smokers and 24.5% smokeless users), while 9.2% of females used tobacco, mainly in smokeless forms. In the urban areas of the same districts, 45% of males were tobacco users (24% smoked; 22.5% used smokeless tobacco), and 8.2% of females were users, again, mainly in smokeless forms. Smoking in these three districts consisted mainly of *beedi* smoking, especially in rural areas.[19] In an earlier study in Mainpuri district, 82% of men and 21% of women were tobacco users, mostly in the smoking form or combined smoking and smokeless forms.[5]

Several rural areas studied in central and north India appear to have high rates of tobacco usage. In a survey in rural Nagaur, Rajasthan, 51% of males and 5% of females were tobacco users among 3148 respondents 21 years of age and above.[20] In urban Jaipur, in three successive studies about 39% of men and 17% of women 20 years and above were tobacco users.[21–23] In Ballabgarh, Haryana, among men 87.6% were tobacco users and among women 52.9% (55 years and above).[24]

Low rates in Punjab contrast with the high rates in other areas of north India. In rural Amritsar, Ferozepur and Gurdaspur districts, among 3600 persons 15 years and above, 19.3% of males and 4% of females were tobacco users.[25]

In two large house-to-house surveys of over 10,000 persons in rural Bihar conducted during 1966–1969, about 80% of the men 15 years and above were tobacco users. Among villagers in Singhbhum district, 64% of the men smoked and in Darbhanga district, 50% men smoked. In

Darbhanga, about half the male smokers also chewed, while in Singhbum, less than a third of smokers also chewed, demonstrating that combined use was common. For women, chewing was more common in Singhbum and smoking in Darbhanga.[26,27] Thus, Bihar has been shown to have a high prevalence of tobacco use.

In a recent survey of 12,000 individuals aged 18 years and above in urban Kolkata, smoking among men was 38% and chewing 36%. Women users were nearly exclusively chewers (19%).[28]

In the Sentinel Survey in three districts of Karnataka of persons 10 years of age and above, 49.2% of males and 16.4% of females in the rural areas were tobacco users. In the urban areas, 32.7% of males and 8.5% of females were tobacco users. In both urban and rural areas, about two-thirds of male users smoked, while most female users chewed tobacco.[19] In another study in Kolar district, 30.9% of males were tobacco users with nearly equal prevalence of smoking and chewing. Some 38.5% of females reported chewing tobacco.[29]

Among rural inhabitants 15 years of age and above in Ernakulam district, Kerala during 1966–1969, 81% of males and 39% of females used tobacco in some form.[26,27] Smoking by itself was practised by 45% of males (15+ years); additionally, 22% both smoked and chewed, and 14% chewed only. Women's tobacco use was essentially confined to chewing (38%). Another survey in Ernakulam in 1971 showed very similar results.[30] In the 1990s, in rural Thiruvananthapuram (Trivandrum) district, about half the men aged 35 years and above were smokers.[31] In urban Thiruvananthapuram, 43.9% and 55.8% of men smoked in two adjacent areas, while 26.4% and 26.8% practised smokeless use.[32] The emerging picture from Kerala is one of high levels of tobacco use, where at least three-fourths of men use tobacco in some form: about half the men smoke and about one-fourth use smokeless tobacco; and among women, a third to one-fifth chew *paan* (betel quid) while smoking is almost negligible among them.

A recent survey in South Arcot district, Tamil Nadu, among men aged 35–69 years, found that nearly 47% had ever been smokers. During the same period, a survey in urban Chennai found that 38% men were ever-smokers.[33]

In two large surveys in Bhavnagar, Gujarat, conducted in the late 1960s[26,27] and late 1990s,[34] overall tobacco use prevalence among men aged 15 years and above was around 70% in both surveys (71% and 67.6%). Smoking by men, however, appeared to have significantly decreased over the years (56% to 35%) and smokeless tobacco use to have increased (9% to 27%), while mixed use remained nearly the same (6% and 4.8%). In women, where smoking remained negligible, smokeless use may have decreased slightly (15% to 12%). *Mawa* chewing was found to have become highly popular among young men (15–35 years).

In a large survey conducted in rural Pune district in Maharashtra in the late 1960s, total tobacco use was 62% among men and 49% among women aged 15 years and above.[7] Most tobacco use consisted of smokeless forms. Similarly, in the city of Mumbai, a survey of residents 35 years and older from the middle and lower socioeconomic classes found 69% of men and nearly 58% of women using tobacco, and smokeless tobacco use predominated.[35] Some 24% men smoked, while smoking was negligible among women.

Occupational group studies

Occupational groups studied for tobacco use have included skilled and unskilled industrial workers, policemen, educational personnel, doctors, and white-collar workers/professionals, as shown in Table 3.1. The larger studies are described here.

In a survey of 57,518 industrial workers in Ahmedabad, Gujarat aged 35 years and above (95% men), 35.6% smoked exclusively, 22.1% smoked and chewed *paan/supari* and 27.1% practised tobacco use in other ways (chewing tobacco with or without lime paste, chewing *paan/supari* or

Table 3.1 Tobacco use prevalence data from urban occupational group studies

Urban workers	*n*	Age (years)	Smoking (%)		Chewing (%)	
			M	F	M	F
Industrial workers[50]						
Ludhiana: Machine tool factory and woollen hosiery mill	473	17–64	50.2	–	NR	–
Ahmedabad: Textile workers (mainly)[36] 1967–1971	57,518	≥35	35.6 22.1 smk+ chew	–	27.1	–
Policemen[51]						
Bombay (in 1969)	3674	≥26	26.9 11.6 smk+ chew	–	47.0	–
Media personnel[52]						
Patna: Press employees	300		10 27 smk+ chew	–	52	–
Educational personnel						
Chandigarh: Teachers[53]	347 M 295 F	30–64	19.3 0.0	–	NR	–
Hooghly District, West Bengal: Teachers[54]	257		Any tobacco 73.9	Any tobacco 13.9	NR	–
Aligarh: University staff and research scholars[55]	2159 M 280 F		33.3	–	20.6	30.4
Lucknow: University teachers[56]	471 M 102 F		21.4 –	–	NR	NR
Professionals and college students[57]						
Siliguri			Sex not stated			
Professionals	588	NR	53.0		NR	
College students	600	18–25	48.8		NR	
Doctors[39]						
Chandigarh	218	NR	31.6 current 23.3 former	–	NR	–
All-India meeting[40]	120 102 M 18 F		10 current 9 occasional 14 former	0.0	8	8
All-India meeting[41]	256 221 M 35 F	26–70	2.3	0.0	NR	NR

NR: not reported; smk: smoking; chew: chewing; M: male; F: female

inhaling snuff). Smoking included *beedi*, cigarette, cigar, *hookah*, *chillum* and pipe.[36]

In the Global School Personnel Survey (GSPS), carried out in 2000 in Bihar, 77.6% of the 502 male school personnel interviewed and 77% of the female personnel interviewed said they were tobacco users. The break-up by type of tobacco use was smoking: 47.4% of men (cigarette smoking: 40.5%) and 31.0% of women (cigarette smoking: 26.9%). Some 58.7% of men and 53.4% of women said they used smokeless products.[37]

The GSPS was also conducted in eight north-eastern states of India during January–March 2001 (Table 3.2). The prevalence of *beedi* smoking varied 10% to 40% among school personnel in this region from. In four of the

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Table 3.2 Prevalence of current tobacco use among school personnel in eight northeastern states: Global School Personnel Survey (GSPS), India[38]

	Total	Men		Women	
State	*n*	Smoking (%)	Smokeless (%)	Smoking (%)	Smokeless (%)
Assam	782	55.3	44.4	33.8	50.5
Arunachal Pradesh	533	45.2	47.9	34.4	49.0
Manipur	395	79.5	75.0	61.4	75.8
Meghalaya	447	69.6	51.3	31.6	56.6
Mizoram	307	75.3	79.2	76.2	87.2
Nagaland	426	55.1	49.8	18.1	32.5
Sikkim	342	52.5	54.2	39.7	73.6
Tripura	562	56.6	55.5	9.2	24.5

Note: Usages were not mutually exclusive and values include daily and occasional users.
Source: Sinha *et al.* 2003[38]

states, cigarette smoking predominated, while in four other states, *beedi* smoking predominated. Other forms of smoking were also found in the region, like *kamchung* (a small pipe) smoking in 6 states and *hookah* smoking as well as marijuana smoking with tobacco.[38]

During a survey conducted in 1986–1987 among 218 doctors in three institutions in Chandigarh, 31.6% were current smokers and 9.6% ex-smokers.[39]

Results of two surveys of professional meetings of doctors from different parts of India showed that about 2% and 10% were current smokers among the male doctors, while none of the women smoked. In the study with the higher proportion of smokers, about 8% of men as well as of women chewed *paan* with tobacco.[40,41]

Studies of medical students have shown that the prevalence of smoking (in all studies) and intensity of smoking progressively increased with the number of years in medical college.[42] Knowledge of the harmful components of cigarettes and *beedis,* and of the health effects beyond bronchitis and lung cancer was poor, even among the final-year students.[43,44]

Regional differences in specific tobacco practices

Very few studies have reported on specific types of tobacco use. *Beedi* smoking was common in six rural areas surveyed during 1966–1969 (Andhra Pradesh, Bihar [two areas], Kerala and Gujarat) and in 1974 (Goa).[4] About 60% of men smoked *beedis* in Ernakulam, Kerala; Singhbum, Bihar and in Goa. However, only 12% of men smoked *beedis* in Srikakulam, Andhra Pradesh where 57% of men smoked *chuttas.* In Bhavnagar, Gujarat 11% of men smoked clay pipes (*hookli*). In all six areas, only a small fraction of men smoked cigarettes (up to 6% in Ernakulam and 5% in Goa), the *hookah* or *chillum.*[5] Chewing was not very prevalent among men in these areas except in Darbhanga, where 44% of men chewed tobacco with lime, and in Kerala, where 33% of men chewed *paan* with tobacco.[2,26]

In rural and urban surveys in Maharashtra, smokeless tobacco use consisted of the application of *mishri* (especially among women) and the chewing of tobacco, mainly in *paan.*[8,35]

Trends with age and time

Tobacco use increases with increasing age. In

Box 3.1 Education and tobacco use

A high prevalence of tobacco use among school personnel in the states of Bihar and the Northeast, teachers in Hooghly district and doctors in Chandigarh, demonstrates that education alone is no guarantee of a low prevalence of tobacco use. The prevailing social environment has its own influence.

the Sentinel Survey, tobacco use prevalence crossed the 50% level among men in the age group of 35–39 years in Karnataka, but in Uttar Pradesh, where the overall prevalence was higher, it crossed that level in the age group of 25–29 years. Among women in Karnataka and Uttar Pradesh, the highest prevalence was reached in the age group of 70 years and above, at levels of 27.6% and 42.6%, respectively, suggesting that in areas with a high prevalence of tobacco use, initiation may occur at an early age.[19]

Types of tobacco use also change with time in succeeding generations. House-to-house surveys conducted in random samples of villages in five districts of Andhra Pradesh, Bihar (2 districts), Gujarat and Kerala during 1966–1969 among 50,915 villagers aged 15 years and above indicated that smoking was becoming more popular among the male youth of those areas because the average age of men who smoked was lower than the average age of men in the entire area's study population. In all five areas, the average age of women smokers was higher than that of the women in the entire study population, indicating that smoking was becoming less popular among younger women in all the areas. On the basis of similar age considerations, chewing appeared to be becoming less popular among both men and women in Ernakulam and Darbhanga, and among women in Bhavnagar.[2] Thus, tobacco use patterns change with time.

Traditional forms of tobacco chewing such as in *paan* now appear to be mainly an indulgence of the older generation; the younger generation is taking up newer forms of tobacco use such as *gutka*, tobacco toothpaste and cigarette smoking.[45] In a survey of 1200 college students, most tobacco users used multiple tobacco products as well as alcohol.[46]

National surveys

Efforts to understand the tobacco use scenario in India by patching together prevalence data collected in various localities in different age groups highlight the utility of national survey data.

The National Household Survey of Drug and Alcohol Abuse in India (NHSDAA), conducted in 2002 among males, covered over 40,000 individuals aged 12–60 years in nearly 20,000 households in 25 states.[47] The overall prevalence of current tobacco use from the NHSDAA was 55.8%.

Table 3.3 gives the age-wise break-up of the NHSDAA data, showing an increase in tobacco use with age, levelling off after 50 years of age. This confirms the trend with age shown in the Sentinel Survey and local surveys.

In India, the National Sample Survey Organization (NSSO) has been conducting yearly surveys since 1950–1951.[48] Tobacco use is part of the consumer behaviour component of the National Sample Survey (NSS), conducted every five years. Another nationwide survey, the National Family Health Survey (NFHS), in its second round (1998–1999), collected information on tobacco use. It found that tobacco use among men was 46.5% and 13.8% among women aged 15 years and above in 1998–1999.[49]

Table 3.3 Tobacco use by age category, NHSDAA, 2004[47]

	12–18 years	19–30 years	31–40 years	41–50 years	51–60 years
Sample (*n*)	8587	13216	7805	5920	5168
Tobacco users (*n*)	1860	7026	5186	4193	3638
Prevalence	55.8	54.9	67.6	72.0	71.5

Source: Srivastava *et al.* 2004

Table 3.4 Available national data for India on tobacco use prevalence among adults, for 1995–1996 and 1998–1999[49]

Survey	Strata	National Sample Survey, 52nd Round, 1995–1996	National Family Health Survey-2, 1998–1999
Age group		15+ years	15+ years
No. surveyed	Urban+ Rural	396,546	315,597
Regular tobacco users	M (%)	51.3	46.5
	F (%)	10.3	13.8
Regular smokers	M (%)	35.3	29.3
	F (%)	2.6	2.4
	All (%)	19.2	NR
Regular smokeless users	M (%)	24.0	28.1
	F (%)	8.6	12.0
	All (%)	16.4	NR

NR: not reported; M: male; F: female
Note: Confidence intervals were not available for any national survey data
Source: Rani *et al.* 2003

While the two surveys have similar sampling methods, it should be kept in mind that in the NSS, the male head of the household responded for all members, while in the NFHS, the female head of the household responded for all members, an important difference in methodology. Prevalence rates of tobacco use were calculated from both the recent NSS 52nd Round and NFHS-2 for the population aged 15 years and above to permit comparison[49] and are presented here (Table 3.4).

The surrogate respondent may underreport tobacco use by younger individuals and the opposite sex either due to ignorance or for fear of social disapproval. Thus, in the NFHS where the respondents were mainly females, the prevalence of smoking among men was reported to be lower than the NSS (29.3% vs 35.3%) where most respondents were males, and the prevalence of smokeless tobacco use among women higher (12% vs 8.6%). Part of the differences may be due to time trends as the surveys were 3–4 years apart. A time trend of overall decreasing tobacco use and a specific increase in smokeless tobacco use is in consonance with the trends in tobacco consumption indicated by the NSS from 1987 (*see* Chapter 2).

Geographic variation

State and regional differences suggested in local studies have generally been confirmed by the national studies, with some exceptions. For example, the NHSDAA found the highest prevalence of tobacco use in South Bihar (94.7%), followed by Uttar Pradesh (87.3%) and high rates in the northeastern states, similar to findings in local surveys and in the GSPS. The lowest rate was found in Kerala (20.6%), which is in contrast to the findings of other recent local studies.

State-wise prevalence using the data of the NFHS-2 are shown in Table 3.5 and for men, graphically displayed in maps (Fig. 3.1). Overall tobacco use increases towards the centre of the country, the north and east. Smoking has an increasing gradient towards the north, northwest, northeast and in the two states of Andhra Pradesh and Kerala.

Table 3.5 State-level prevalence of tobacco smoking and chewing in India by sex (age 15 years and above)*

	Smoking				Chewing			
	Men		Women		Men		Women	
Region/state	%	95% CI	%	95% CI	%	95% CI	%	95% CI
North								
New Delhi	23.9	22.0–25.9	1.8	1.4–2.2	13.1	11.5–14.9	2.5	1.9–3.2
Haryana	40.4	37.7–43.1	3.5	2.8–4.3	8.1	6.7–9.8	0.9	0.6–1.3
Himachal Pradesh	38.6	36.6–40.6	2.4	1.8–3.1	7.8	6.7–9.1	0.5	0.3–0.8
Jammu and Kashmir	44.3	42.0–46.6	8.3	7.1–9.7	7.3	5.8–9.1	0.9	0.6–1.3
Punjab	13.9	12.2–15.8	0.3	0.2–0.5	9.3	8.0–10.8	0.2	0.1–0.4
Rajasthan	37.8	35.7–39.9	4.1	3.2–5.2	19.0	17.7–20.4	3.8	2.9–4.9
Central								
Madhya Pradesh	29.4	27.6–31.1	0.9	0.6–1.2	40.3	38.7–42.0	14.4	12.7–16.2
Uttar Pradesh	33.8	32.5–35.2	3.0	2.6–3.5	36.3	34.6– 38.0	10.9	10.1–11.8
East								
Bihar	26.3	24.8–27.9	6.2	5.5–7.0	51.8	50.1–53.5	6.7	6.0–7.6
Orissa	25.2	23.2–27.2	0.9	0.7–1.2	49.0	46.7–51.4	34.3	31.9–36.9
West Bengal	39.4	37.4–41.5	2.5	2.0–3.2	23.2	20.9–25.6	15.1	13.5–17.0
North-East								
Assam	31.5	28.4–34.9	2.6	2.0–3.4	47.8	44.7–51.0	24.3	22.1–26.6
Arunachal Pradesh	25.6	23.1–28.2	5.6	4.2–7.3	51.6	47.9–55.3	33.1	29.6–36.7
Manipur	35.0	32.0–38.1	12.0	10.0–14.2	34.1	31.1–37.3	19.2	15.5–23.5
Meghalaya	55.2	50.6–59.7	6.7	4.2–10.6	16.9	13.8–20.5	27.6	23.8–31.7
Mizoram	59.4	57.0–61.8	22.0	19.6–24.6	60.2	56.5–63.8	60.7	57.2–64.0
Nagaland	38.0	34.3–41.8	2.4	1.3–4.5	45.0	41.3–48.8	16.5	13.7–19.7
Sikkim	19.4	17.1–22.0	8.2	6.9–9.7	39.5	36.5–42.7	18.6	16.2–21.2
Tripura	48.5	44.9–52.2	9.7	6.7–13.9	10.8	8.9–13.1	5.2	3.3–8.1
West								
Goa	17.8	16.1–19.6	2.0	1.2–3.2	7.7	6.0–9.9	8.0	6.3–10.2
Gujarat	25.3	23.5–27.2	1.4	1.0–1.8	24.6	22.8–26.4	8.0	7.0–9.2
Maharashtra	13.3	12.1–14.6	0.2	0.1–0.4	34.1	32.3–36.0	18.0	16.1–20.0
South								
Andhra Pradesh	35.4	33.4–37.5	4.2	3.5–4.9	10.7	9.4–12.0	9.9	–
Karnataka	25.7	24.1–27.4	0.3	0.2–0.4	13.8	12.1–15.6	14.1	12.7–15.7
Kerala	28.2	26.5–30.0	0.4	0.3–0.7	9.4	12.7–15.7	10.1	9.1–11.2
Tamil Nadu	27.0	25.4–28.8	0.3	0.2–0.6	12.9	9.1–11.2	10.7	9.3–12.2
						9.3–12.2		

CI: confidence interval

Source: Rani *et al.* 2003

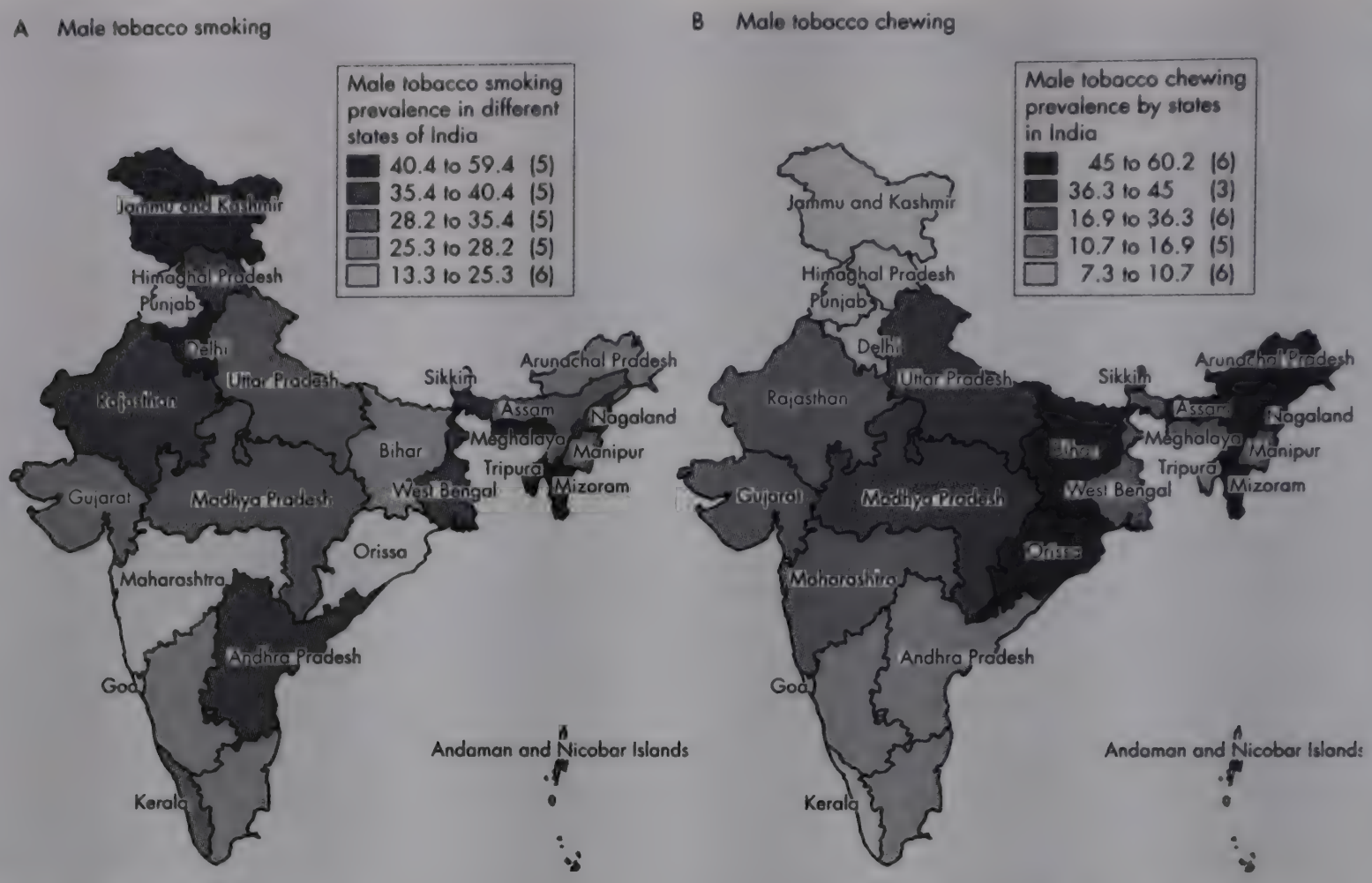


Fig. 3.1. Prevalence of tobacco smoking and tobacco chewing among men aged 15 years and above in different states of India (brackted numbers denote the number of states)

Source: Rani *et al.* 2003[49]

3.2 PREVALENCE OF TOBACCO USE IN INDIA

KEY MESSAGES

- About 45 surveys conducted since the 1960s in limited urban and rural areas are available, covering different age groups, but only a handful were large enough to be representative of the area studied.
- Male tobacco use prevalence in 1995–1996 was 51.3% and in 1998–1999 it was 46.5% according to the National Sample Survey 52nd Round and National Family Health Survey-2. The prevalence of tobacco use among females was 10.3% and 13.8% in the two successive surveys.
- The National Household Survey of Drug and Alcohol Abuse conducted in 25 states (excluding Jammu and Kashmir) in 2002 reports that 55.8% of males 12–60 years of age currently use tobacco.
- Trends seen in the data include higher tobacco use prevalence among males compared to females and among older age groups compared to younger.
- Geographic area is a determinant of the type of tobacco use and prevalence of usage; overall tobacco use increases towards the centre, the north and east. Chewing follows this pattern. Smoking has an increasing gradient towards the north, northwest, northeast and in the two states of Andhra Pradesh and Kerala.

3·3

Prevalence of Tobacco Use Among Women

Why focus on women? A global perspective

Tobacco use plays a pivotal role in perpetuating health inequalities among different socio-economic groups and between genders. Women tobacco users not only share the same health risks as men, but are also faced with health consequences that are unique to women, including those connected to pregnancy and cervical cancer.

Smoking among women in most high-income countries has increased over the past 20 years, though there has been a fall in smoking among men over the same period.[58] The number of women smokers worldwide is projected to almost triple over the next generation, from the current 200 million to more than 500 million.[59] The biggest rise in female smoking is projected to be in the less developed countries.

Gender-based psychosocial aspirations are blatantly exploited to promote tobacco. Almost all cigarette and chewing tobacco advertising imagery in India includes women, taking advantage of the changing position of women in society, and their increasing socioeconomic independence. As a result, many educated young women perceive smoking as a symbol of liberation and freedom from traditional gender roles. Peer and advertising pressure encourages even knowledgeable women to smoke.

Prevalence and trends of tobacco use among women in India

Tobacco use among women is prevalent in all regions of India and among all sections of society—overall, 2.4% of women smoke and 12% chew tobacco.[49] The prevalence of smoking among women is low in most areas due to social unacceptability, but is somewhat common in parts of the north, east, northeast and Andhra Pradesh (Fig. 3.2).

A few available studies on pregnant women suggest that tobacco use prevalence among them is not different from that of women in the general population.[60–62] This is a cause for concern, as it indicates no specific tobacco use prevention efforts during antenatal care. In a report from a large teaching maternity hospital in Mumbai, 33.4% of women in the reproductive age group were smokeless tobacco users.[62] Women in many rural areas believe that tobacco has many magical and medicinal properties; keeping the mouth clean, getting rid of a foul smell, curing toothache, controlling morning sickness, during labour pains, etc.[63]

Anecdotal evidence points to an increase in smoking among Indian women[64] although the national surveys do not show a definite trend in women's smoking prevalence. (The proportion of women smokers of all women tobacco users was about 20% in 1987–1988 and 1993–1994,[48] about 25% in 1995–1996 and 17% in 1998–1999.[49] Though the prevalence of smoking among Indian women is low at this point of time, it needs to be tracked carefully due to the increased marketing efforts and impact of globalization. There is already an indication that *beedi* and cigarette smoking is high (at least 30%) among women in Bihar and the northeastern states.[37,38]

In the NFHS 1998–1999, the proportion of

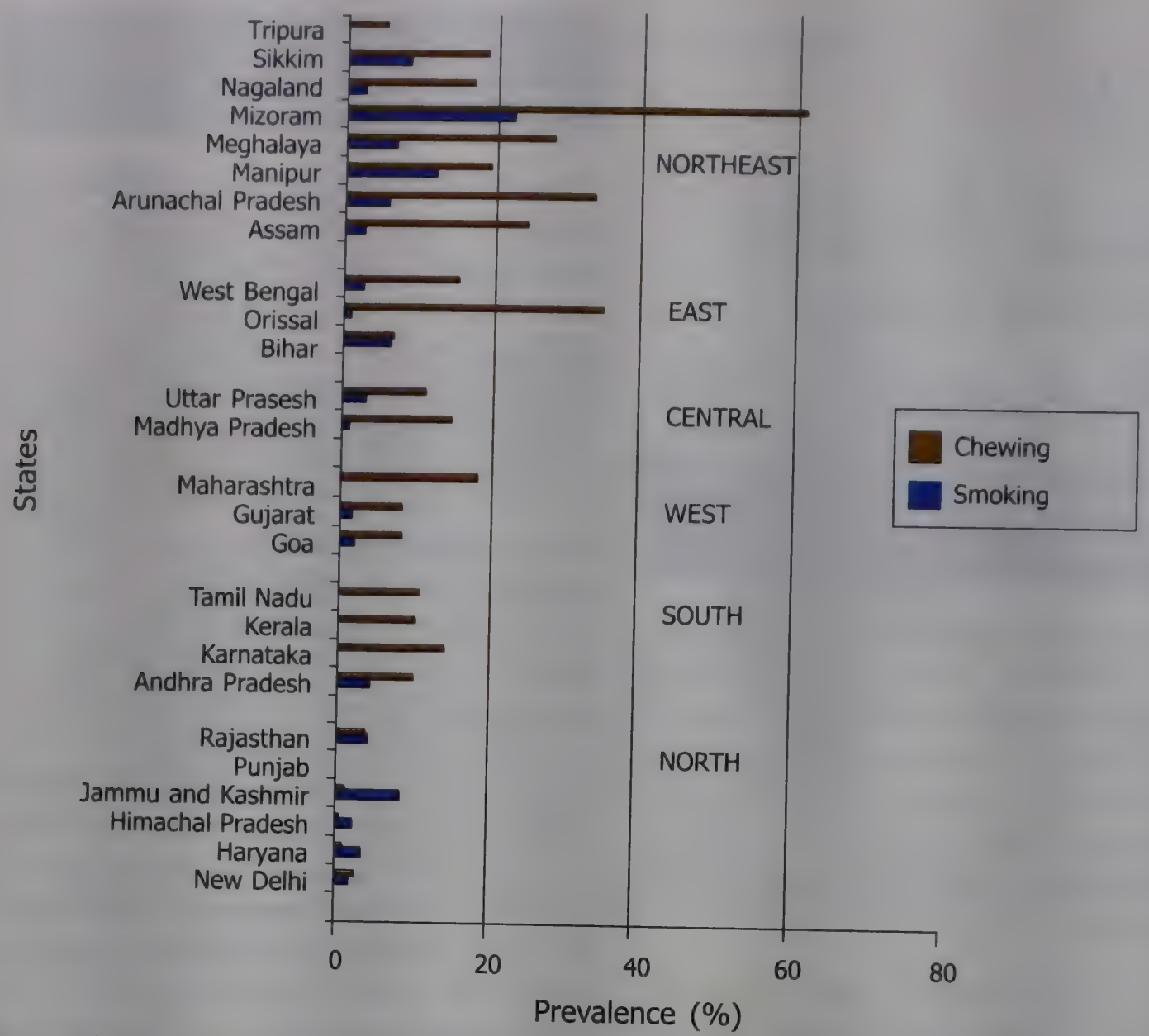


Fig. 3.2 The prevalence of tobacco use among women[49]

regular smokers and chewers among females increased up to the last age group, 60+, while that for males increased up to the age of 45–59 years and then tended to flatten out (Fig. 3.3).[49] A similar finding has been consistently observed in the other national surveys and the Sentinel Survey, as well as in several smaller-scale studies. Among women in Delhi, the prevalence of smoking increased with age up to the last age group, but among men, smoking prevalence was highest in those aged 35–44 years.[16] Thus, initiation of tobacco use in females may not be limited to childhood and the teenage years.[19]

Box 3.2 Women and smoking

It has been suggested that with young women increasingly taking up newer forms of smokeless tobacco use and smoking, it is likely that there will be a new peak at 15–24 years of age.[45]

Regional differences

Region-specific differences in tobacco use practices are shown in several large population-based studies. In seven rural surveys conducted during 1966–1969 (Andhra Pradesh, Bihar [two areas], Gujarat and Kerala), in Pune district, Maharashtra and in Goa in 1974, tobacco use prevalence among women aged 15 years and above varied from 15% (Gujarat) to 67% (Andhra Pradesh).[2,4,8,27]

Among the seven areas, the prevalence of smoking was 64% among women in Srikakulam district, Andhra Pradesh (64%), where reverse *chutta* smoking was common (59%). Forty-five per cent of women in Darbhanga district, Bihar smoked, where *beedi* (13%) and *hookah* smoking (28%) were the most common forms. In these two areas of high smoking prevalence among women, smokeless tobacco use was uncommon,

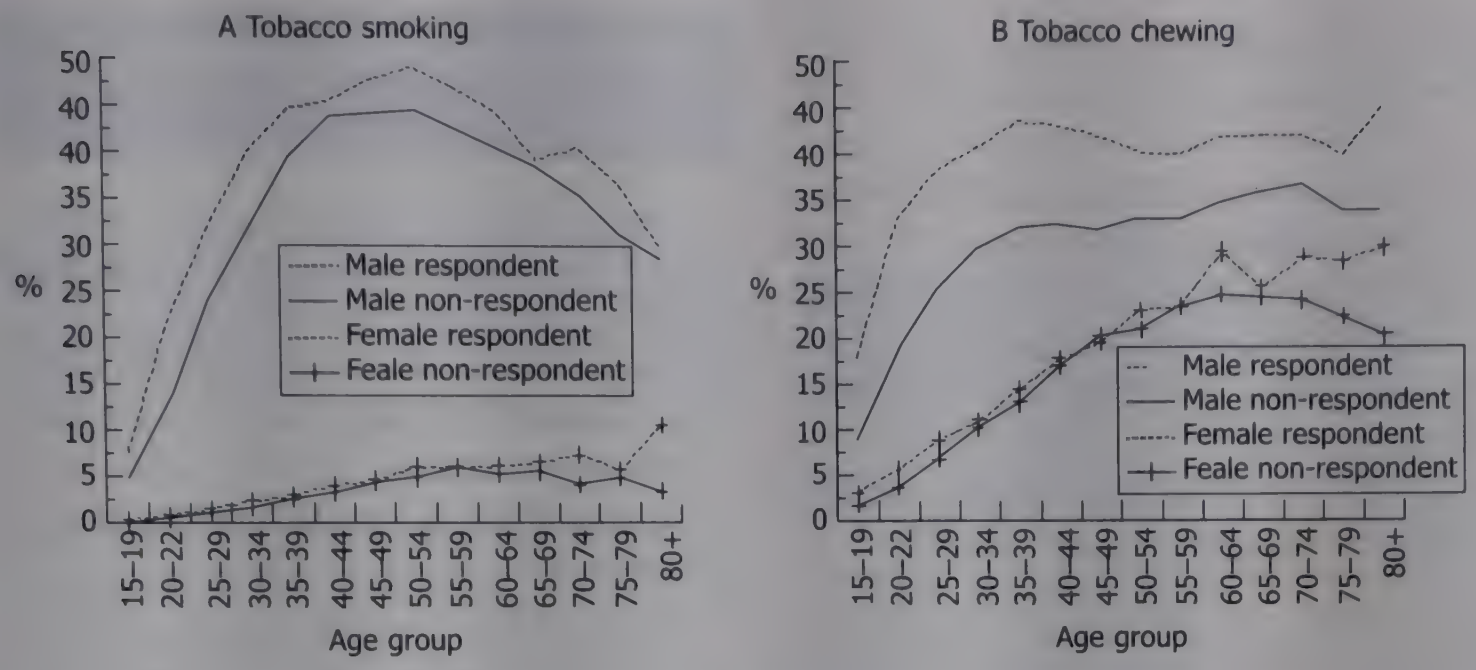


Fig. 3.3 Age-specific prevalence of tobacco smoking and chewing by men and women in India, aged 15 years and above, during 1998–1999 (NFHS-2)[49]

but in all the other areas, smokeless use (mainly chewing) was the most prevalent. Women's smoking prevalence was 19% in Goa, where *beedi* (12%) and *dhumti* smoking (6%) were favoured. Women who smoked *dhumti* generally smoked one or two per day. *Beedi* smoking among women varied from 4% to 13% in the different districts, while cigarette smoking was negligible.[2,4,8,27]

Smokeless tobacco use was more common among women in all the other areas. The prevalence of chewing tobacco use, especially *paan* with tobacco, was as high as 27% in Goa and 35% in Kerala. In Bhavnagar, Gujarat, 14% of women applied *bajjar* to the gums, in Singhbum (Bihar) 16% applied *gudhaku* to their gums and in Darbhanga 7% used tobacco with lime.[2,26] In Pune district, Maharashtra, almost no women smoked but 49% of women were smokeless tobacco users; altogether 39% used *mishri*.[2,4,8,27]

In an urban survey conducted during 1992–1994 in Mumbai, 57.5% of women in the age group of 35 years and above were current tobacco users, almost all of smokeless tobacco (only 0.4% smoked).[35] The most common form of smokeless tobacco use was *mishri*, sometimes combined with other smokeless tobacco. Over 90% of women who used *mishri* applied it less than 3 times a day. This low frequency is consistent with the practice of its use as a dentifrice. *Mishri* use tended to begin in childhood, while *paan* chewing tended to begin later.

According to NFHS 1998–1999 data, regions in order of increasing prevalence of tobacco use among women are the north, south, west, central, east, and the northeast (Fig. 3.3). Chewing in various states in 1998–1999 among women was as follows:

- Up to 61% in Mizoram
- Between 30% and 40% in Orissa and Arunachal Pradesh
- Between 20% and 30% in Meghalaya and Assam
- Between 15% and 20% in Manipur, Sikkim, Nagaland, Madhya Pradesh, Uttar Pradesh, West Bengal and Maharashtra
- Between 10% and 15% in Karnataka, Kerala and Tamil Nadu
- Between 5% and 10% in Andhra Pradesh, Goa, Gujarat, Tripura and Bihar
- Between 2% and 4% in Delhi and Rajasthan
- Less than 1% in Punjab, Himachal Pradesh, Haryana, and Jammu and Kashmir.

Smoking in various states among women in 1998–1999 was as follows:

- Between 10% and 25% of women currently smoked in Mizoram and Manipur.
- Between 5% and 10% of women currently smoked in Jammu and Kashmir, Bihar, Tripura, Sikkim, Meghalaya and Arunachal Pradesh.
- Less than 5% of women currently or ever smoked in the large majority of states.

Socioeconomic and demographic trends

As covered in some detail in Chapter 2, women's tobacco use is higher in the less educated and poorer social strata. Yet, the socioeconomic gradients for tobacco use are steeper for women than for men.[49] In a large study in Delhi, being a housewife, a student, or being retired had a protective effect in comparison to being a professional.[16]

3.3 PREVALENCE OF TOBACCO USE AMONG WOMEN

KEY MESSAGES

- India has a huge problem of widespread smokeless tobacco use among women, particularly among disadvantaged women.
- The prevalence of smoking is higher among rural women, and women in the north and northeast.
- Tobacco use in pregnant women is similar to that in non-pregnant women of the same age.
- The difference between male and female smoking rates is narrowing in some areas where smoking among women has been hitherto uncommon.
- Differentials in the prevalence of tobacco use among various socioeconomic groups are much more acute in women compared with men.

3.4

Prevalence of Tobacco Use Among the Youth

A literature review on tobacco use among the youth revealed that information is limited to the district or township level and the methodologies used vary. The Sentinel Survey of the World Health Organization–South-East Asia Regional Office (WHO-SEARO) and Indian Council of Medical Research (ICMR)[19] provided detailed population-based tobacco use prevalence data for youth in the age group of 10–14 years in two states—Uttar Pradesh (boys 3%; girls 0.6%) and Karnataka (boys 1.3%; girls 0.1%). The Global Youth Tobacco Survey (GYTS), supported by the WHO and the Centers for Disease Control and Prevention (CDC), conducted during the years 2000–2004, is the first survey that provides data on youth (13–15 years) for national and international comparison with standardized methodology. The GYTS data are available for 26 major states, which represent 94% of the Indian population.

This section provides estimates of tobacco use among the youth specifically using the school-based GYTS for India.

Objectives and methodology

The objectives of the GYTS were to examine the prevalence of tobacco use among school-going youth in the age group of 13–15 years, their knowledge about the harmfulness of tobacco, access to tobacco, attitudes towards tobacco use, social beliefs and perceptions, cessation behaviour, exposure to tobacco advertisements and attitudes towards tobacco control.

The GYTS is a school-based, cross-sectional survey that was independently conducted in different states of India, using a uniform methodology.[65] In brief, GYTS employed a two-stage cluster sample design to produce a representative sample of students in grades eight to ten in both government and private schools, which roughly corresponds to the age group of 13–15 years. At the first stage, the probability of schools being selected was proportional to the number of students enrolled in the specific grades. At the second stage, classes within the selected schools were randomly chosen. All students from selected classes attending the school on the day of the survey were eligible to participate. For estimating the prevalence rates, weighting factors were applied to each student record to adjust for non-response (school, class and student) and variation in the probability of selection at the school, class and student levels. For the GYTS data presented here, the school response rate ranged from 92% to 100% and the student response rate ranged from 70.1% to 90.6%. This sample provided responses from 53,654 individual students in 26 Indian states, namely Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chandigarh, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, Uttaranchal and West Bengal.

Results

Tobacco use prevalence and other variables

The summary of the countrywide results for GYTS India, 2000–2004, are presented in this section under important variables:

Ever tobacco use: Ever tobacco use (ever consumed any tobacco product) was reported by one-fourth of students (25.1%); the prevalence ranged from 4.0% (Himachal Pradesh) to 75.3% (Mizoram).

Current use of tobacco in any form: Students consuming any tobacco products within 30 days preceding the survey were

considered current tobacco users. Among students in the age group of 13–15 years, 17.5% were current users of tobacco in any form, and current use ranged from 2.7% (Himachal Pradesh) to 63% (Nagaland).

Current smokeless tobacco use: Among students aged 13–15 years, 14.6% were current smokeless tobacco users. Users ranged from 2% (Himachal Pradesh) to 55.6% (Bihar).

Current smoking: Current smoking in India was reported by 8.3% of students. It ranged from 2.2% in Himachal Pradesh to 34.5% in Mizoram.

Box 3.3 Tobacco use among students (Grades 8–10)

- 17.5% were current users of tobacco in any form (range: 2.7%–63%);
- 14.6% were current smokeless tobacco users (range: 2.0%–55.6%);
- 8.3% were current smokers (range: 2.2%–34.5%).

(GYTS 2000–2004)

Smokeless vs smoking: Clearly, current smokeless tobacco use was significantly more common than current smoking among students aged 13–15 years (Table 3.6). It is to be noted that the total of smokers and users of smokeless forms is higher than that of current users of

Table 3.6 Tobacco use prevalence and related issues, GYTS India, 2000–2004

	India		Lowest (State)		Highest (State)	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Prevalence						
Ever tobacco use	25.1	(±1.8)	4.0	(±0.9)[5]	75.3	(±5.3)[26]
Current tobacco use	17.5	(±1.5)	2.3	(±1.1)[5]	62.8	(± 3.4)[27]
Current smokeless	14.6	(±1.5)	2.0	(±0.8)[5]	55.6	(±7.5) [16]
Current smoking	8.3	(±1.2)	2.2	(±0.7)[5]	34.5	(±4.5)[26]
Current cigarette smoking	4.2	(±1.2)	0.5	(±0.3)[19]	22.8	(±3.3) [26]
Current use of non-cigarette	13.6	(±1.0)	1.6	(±0.9)[5]	47.4	(±10.6)[24]
Smoker needs tobacco first thing in the morning	57.8	(±5.8)	53.7	(±4.1)[26]	94.9	(±3.8)[29]
Second-hand smoke						
Exposure (inside home)	36.4	(±1.6)	9.9	(±2.9)[8]	79.0	(±10.9)[24]
Exposure (outside home)	48.7	(±1.6)	23.5	(±3.9)[8]	84.4	(±6.1)[25]
Favours smoking ban in public places	74.8	(±1.2)	31.4	(±7.3)[24]	90.9	(±1.9)[21]
Access and availability						
Purchased cigarette in store	65.8	(±7.2)	12.1	(±8.7)[1]	95.7	(±5.6)[10]
Not refused because of age	55.1	(±14.1)	4.2	(±1.7)[13]	98.1	(±2.1)[22]
Tobacco promotion						
Percentage who have seen a lot of advertisements						
For cigarettes on billboards	42.1	(±1.4)	2.8	(±1.9)[16]	73.2	(±5.6)[29]
For *beedi* on billboards	38.3	(±1.6)		NA		NA
Offered free sample of cigarette	8.1	(±1.3)	0.6	(±0.5)[16]	100.0	(±0.0)[24,26,28,29]
Belongings with cigarette logo	12.4	(±1.3)	1.1	(±0.8)[16]	26.1	(±7.3)[28]
Offered free sample of *beedi*	8.0	(±1.3)		NA		NA
Belongings with *beedi* or *paan masala* logo	14.6	(±1.4)		NA		NA
Cessation						
Wants to stop smoking	68.5	(±7.2)	19.6	(±12.5)[24]	88.9	(±6.9)[1]
Tried to quit smoking	71.4	(±11.7)	8.4	(±3.3)[28]	97.8	(±3.5)[10]
Curricular teaching						
Taught dangers of smoking in class	50.9	(±1.6)	2.7	(±1.9)[16]	75.5	(±5.2)[8]
Taught effects of tobacco in class	47.4	(±1.5)	3.1	(±2.1)[16]	71.4	(±5.4)[8]

States: Chandigarh[1] Chhattisgarh[2] Delhi[3] Haryana[4] Himachal Pradesh[5] Jammu and Kashmir[6] Madhya Pradesh[7] Punjab[8] Rajasthan[9] Uttar Pradesh[10] Uttaranchal[11] Andhra Pradesh[12] Karnataka[13] Kerala[14] Tamil Nadu[15] Bihar [16] Orissa[17] West Bengal[18] Goa[19] Gujarat[20] Maharashtra[21] Assam[22] Arunachal Pradesh[23] Manipur[24] Meghalaya[25] Mizoram[26] Nagaland[27] Sikkim[28] Tripura[29]

NA: not available

tobacco in any form due to overlap, as a small proportion of students used both forms.

Current cigarette and non-cigarette tobacco use: The GYTS India results show that current non-cigarette tobacco use (13.6%) was three times more common than current cigarette smoking (4.2%). The current prevalence of cigarette smoking ranged from 0.5% in Goa to 22.8% in Mizoram, whereas the prevalence of current non-cigarette tobacco use ranged from 1.6% in Himachal Pradesh to 47.4% in Manipur.

Second-hand exposure: Over one-third of students (36.4%) were exposed to second-hand smoke inside their homes and nearly half (48.7%) outside their homes. The exposure to second-hand smoke inside the home ranged from 9.9% (Punjab) to 79.0% (Meghalaya) and outside the home it ranged from 23.5% in Punjab to 84.4% in Meghalaya.

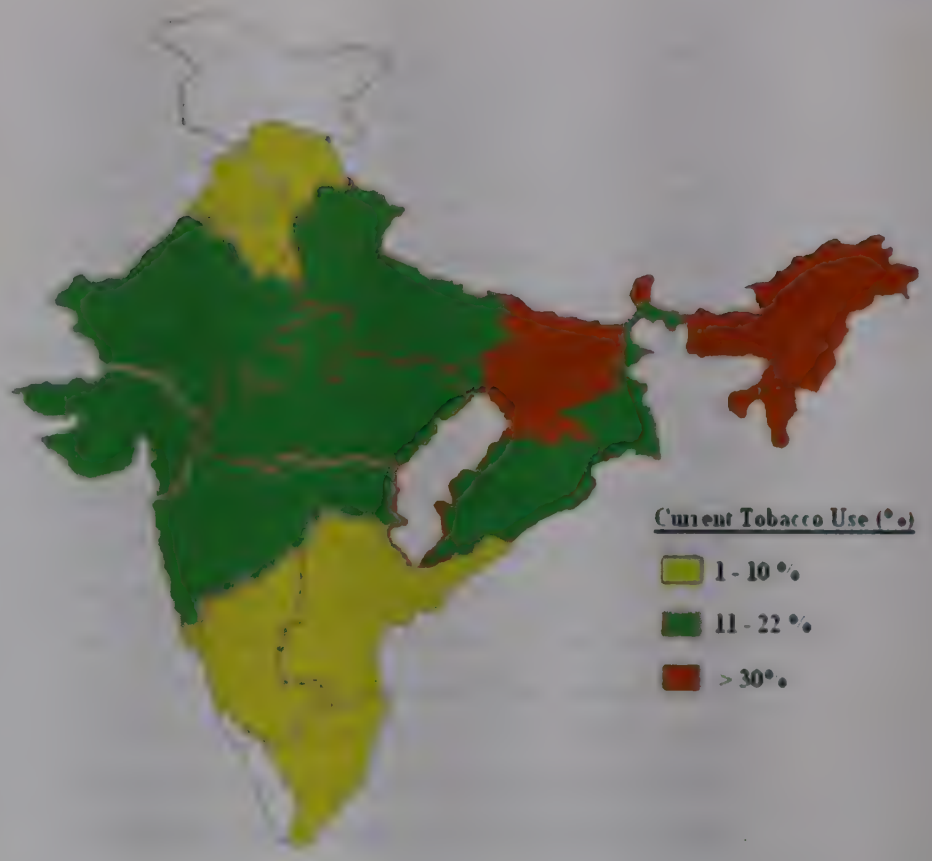


Fig. 3.4 Levels of current tobacco use in different states of India, GYTS 2000–2004

Factors associatd with tobacco use

The determinants of tobacco use among the youth are many and varied. First of all, socio-demographic factors such as gender, state and region, and rural versus urban residence were found to be related to tobacco use among these youth. Factors affecting social norms are described next: family influence and tobacco use by friends; curricular teaching; exposure to advertisements in the media and community; access and availability of tobacco products in the area of residence; concurrent alcohol and tobacco smoking; nicotine dependence; desire to quit tobacco use; levels of awareness about the harmfulness of tobacco and attitudes towards government tobacco control policies on access and availability of tobacco products to minors; school policies; tobacco control strategies and tobacco industry tactics to attract the youth.

Gender: Positive responses to all the questions on tobacco use were reported significantly more commonly among boys than girls: ever tobacco use (boys 30.4 [±2.3], girls 16.8 [±2.2]), current any tobacco use (boys 22.0 [±2.1], girls 10.3 [±1.9]), current smokeless tobacco use (boys 18.5 [±2.1], girls 8.4 [±1.9]), and current smoking (boys 10.5 [±1.6], girls 4.4 [±1.0]).

State and region: High prevalence (>30%) was reported in the northeastern states and Bihar, intermediate prevalence (11%–22%) in Gujarat, Maharashtra, Madhya Pradesh, Orissa, Rajasthan, West Bengal, Uttar Pradesh and Uttaranchal, and low prevalence (1%–10%) in Andhra Pradesh, Chandigarh, Delhi, Goa, Haryana, Himachal Pradesh, Karnataka, Punjab, and Tamil Nadu (Fig. 3.4).

Rural versus urban residence: The GYTS results from Karnataka, Bihar and Rajasthan revealed that there was no statistical difference in overall current tobacco use among rural and urban students (rural 59.4%, urban 58.2%); however, current *beedi* smoking in rural areas (5.0%) was significantly higher than in urban areas (2.4%) in Bihar. Such information was not available for any other state.

Family, home, friends and school: Comparing the GYTS data from 26 states, current tobacco use was significantly correlated with variables such as (i) the percentage of students who have one or more parents using

tobacco (Spearman correlation coefficient=0.77, p<0.001); (ii) smoking at home was reported by 36.7% (average) of students, ranging from 8.8% in West Bengal to 96.1% in Uttar Pradesh;[65] (iii) the percentage of students who have most or all friends who smoke (Spearman correlation coefficient = 0.85, p<0.001); and (iv) exposure to second-hand smoke inside the home (Spearman correlation coefficient = 0.67, p<0.001) and outside (Spearman correlation coefficient = 0.70, p<0.001); (v) at school, the level of curricular teaching on topics such as the dangers of smoking and chewing (Spearman correlation coefficient = −0.75, p<0.001), and the effects on appearance of smoking and chewing (Spearman correlation coefficient = −0.46, p<0.001) were inversely associated with current tobacco use.

The GYTS data from eight northeastern states of India showed that tobacco users were more likely than never-tobacco users to admit that most or all of their friends smoke. Additionally, parental tobacco use was reported two to three times more often by tobacco users as compared to never-tobacco users.[11]

Curricular teaching: About half of all students agreed that they had been taught about the dangers of smoking (ranging from 2.7% in Bihar to 75.5% in Punjab) and the effects on appearance of tobacco use (ranging from 3.1% in Bihar to 71.4% in Punjab) (Table 3.6).

Media and advertisements: The GYTS revealed that 42.1% and 38.3% of students reported seeing pro-cigarette and pro-*beedi* advertisements 'a lot', respectively. Students reported being equally exposed to *gutka* advertisements on billboards and community events.[66] Over 12% and 14% students reported having some object with a brand logo of cigarettes/*beedi* or *paan masala,* respectively (Table 3.6). Among the GYTS participants in India, about 8% of students were offered free samples of cigarettes and *beedis* by tobacco companies (Table 3.6).

Access and availability: Among current smokers, 65.8% purchased cigarettes in a store (ranging from 53.1% [Nagaland] to 95.7% [Uttar Pradesh]) (Table 3.6). Among students who bought cigarettes in a store in the past 30 days, over 55.1% (average) were not refused purchase by anyone because of their age (range: 6.2% in Uttar Pradesh to 98.1% in Assam) (Table 3.6).

Tobacco and co-morbid alcohol use: The GYTS data from the eight northeastern states showed that co-morbid smoking and drinking ranged from 6.9% in Meghalaya to 13.1% in Sikkim. Among boys it ranged from 8.5% in Meghalaya to 19.6% in Manipur, and among girls from 2.9% in Manipur to 7.7% in Mizoram.[67]

Nicotine dependence: Nicotine dependence, was assessed by one question on whether the respondent needed tobacco first thing in the morning. In the northeastern states, over two-thirds of cigarette-smoking students (especially among boys) and nearly half of smokeless tobacco users reported needing tobacco first thing in the morning.[11]

Desire to quit tobacco use: Attempts and social support

The GYTS results revealed that over 68.5% (average) of students who smoked wanted to stop (range: 19.6% in Manipur to 88.9% in Chandigarh), whereas 71.4% (average) had already tried to stop smoking during the past year (range: 8.4% in Sikkim to 97.8% in Uttar Pradesh). For all India, 84.6% of cigarette-smoking students had received help or advice to stop smoking from family members, community members, health personnel or friends (range: 10.5% in Sikkim to 97.8% in Uttar Pradesh). In the northeastern states, however, compared to the national point estimate, such help was reported to be low (<39% in 5 of 8 states).[11]

Awareness of the dangers of tobacco and attitudes towards tobacco control

Awareness: Nationwide GYTS data show that 57.9% students agreed that smoke from others is harmful to them (range: 5.1% to 86.3%). Lower awareness levels were seen in the northeastern states as compared to the rest of India.

Attitudes: An assessment of attitudes towards tobacco control showed that nearly three-fourths (74.8%) of students (31.4% in Manipur to 90.9% in Maharashtra) thought that smoking should be banned in public places (Table 3.6).

Discussion

A review of the GYTS data throws up an extremely wide range of variations regarding tobacco use. India, being a country of over one billion people, has the highest and lowest rates for current use of any tobacco product in the world: 3.3% in Goa to 62.8% in Nagaland.[68] These wide differences in prevalence within a country underscore the importance of subnational or regional data, for national estimates can obscure important regional differences within the country.

Many studies conducted during 1989–2004 using different methods have shown that tobacco use among girls students in schools,[13,69–77] colleges[76,78] and medical and dental colleges[42,44,79–84] was low relative to boys and adults in the general population. The results of the India GYTS 2000–2004 are consistent with the above studies; however, in some of the states, there is no statistical difference in the use of cigarette and non-cigarette products between boys and girls.[85] This indicates a breakthrough in social norms in India, where tobacco use by girls and women is considered taboo.

The average percentage of ever-smoker students in the GYTS who smoked their first cigarette before the age of 10 years was 54% (average for 13 states: 8 northeastern states, Bihar, Goa, Maharashtra, Tamil Nadu and West Bengal [range: 12.0% in West Bengal to 87.8% in Manipur]).[68] Early initiation before 10 years of age was reported to be high in the states where tobacco use prevalence was high. In the northeastern states, ever-tobacco users who first used tobacco before the age of 10 years was more than 65% in all the states except Mizoram (23.9%).[68] In the present review it is clear that early initiation is increasing and demands that environmental factors be properly regulated. A definite strategy for curricular teaching at all academic levels is required.

The GYTS in Bihar and Karnataka revealed that there was no statistical difference in rural–urban current tobacco use among students 13–15 years of age. This may be because of the increasing reach of the tobacco industry in rural areas.

In the GYTS, among students of grades 8–10 in 26 states (53, 654), about 14% of never-smokers (average 13.8%) (range: 4.55% in Punjab to 46.1% in Sikkim) expressed the opinion that they were likely to initiate smoking next year. In Karnataka among college students, although female students interviewed were non-smokers, several suggested that in the future, smoking might be an acceptable behaviour among college-going females.[78] This indicates that the marketing effect of tobacco industry is overriding prevention strategies.

When asked about their perceptions of smoking among the youth in western countries, the majority of college students from different colleges in Karnataka believed that three-quarters of male and female youth in the West smoked and this perception has been largely formed through media images, including satellite television and films. With regard to addiction, it was widely believed that filter-tipped cigarettes were one of the most addictive products because they are made of better quality tobacco, and are milder and smoother to smoke. Therefore, a person could easily smoke more of them, which would lead to addiction. Another widely held belief was that the more expensive the cigarette, the less harmful it was for one's health.[78]

In India the misconception is widespread that tobacco is good for the teeth or health. Specific teeth-related problems have been assigned as the reason for starting tobacco use. In the GYTS reports from the northeastern states of India, tobacco users reported significantly more often that tobacco relieves toothache and helps in morning motions, etc. than did never-tobacco users.[11]

Many companies take advantage of these misconceptions by packaging and positioning their products as dental care products. In India, the 1992 amendment to the Drugs and Cosmetic Act, 1940 prohibits the use of tobacco as an ingredient in dental care products.[12] Tobacco products are used as a dentifrice in different parts of India.[13,70,75] A laboratory test of five samples of red tooth powder that did not declare tobacco as an ingredient, 10 years after the law had been amended, found a tobacco content of 9.3 to 248 mg per gram of tooth powder.[12] A clear strategy addressing this specific issue needs to be planned and implemented. In a GYTS report for 14 states, namely Bihar, Goa, Maharashtra, Uttar Pradesh, Uttaranchal and eight northeastern states, current use of tobacco products as a dentifrice ranged from 6% in Goa to 68% in Bihar.[12]

Parents and teachers are the initial role models for young children. In the northeastern states and Bihar, tobacco use among adults[48,49,86,87] and schoolteachers[37,38] was found to be high and so is the current tobacco use prevalence among students 13–15 years of age. Over 80% of tobacco users in these states showed that they received help from someone within the community.[11] This is one example where preaching does not work unless the role models change themselves too, and practise what they preach. The GYTS revealed that those states having higher levels of curricular teaching have a low prevalence of tobacco use by students. Bihar (teaching 3%, tobacco use by students 59%) and Punjab (teaching 75% and tobacco use by students 3%) may be taken as examples of two extremes.

From different reports on the Global School Personnel Survey (GSPS) in India[37,38,88] conducted simultaneously with the GYTS, it has been revealed that tobacco policies in schools restricting student smoking (28%) and school personnel smoking (26%) are rarely adopted and enforced. Tobacco prevention instruction by teachers on six different teaching and training measures was low (<35%). A special striking feature was the lack of teaching material and training for teachers regarding tobacco legislation (5%). However, there is evidence that central government schools that adopt tobacco control policies had a low prevalence of current tobacco use among students[89] and school personnel[90] as compared to state schools, which had no policies.

A study[91] from Kolkata found that increased tobacco use was associated with government schools versus private schools. A survey in 45 schools in Mumbai found that tobacco use among boys in their final year in English medium private schools (22.5%) was significantly higher as compared to students from Indian language private (6.9%) and municipal schools (13.8%).[73] The GYTS data show that students in schools under State Government boards reported significantly higher current tobacco use than Union Government board schools in Bihar.[75]

Goa, Delhi and a few other states have policies on tobacco control and these states have a low prevalence of tobacco use among the youth. However, in Delhi and Goa, over 30% and 20% students, respectively, reported that they experienced exposure to second-hand smoke outside their homes in the week preceding the GYTS. Apart from this, there is other evidence that indicates that legislation for tobacco control is not properly implemented in India.[92] About 90% of students in the age group of 13–15 years supported banning smoking in public places. For preventing exposure in public places, the existing law 'The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003 No. 34 of 2003' needs to be implemented vigorously, while the public needs to be informed about the dangers of second-hand smoke.

3.4 PREVALENCE OF TOBACCO USE AMONG THE YOUTH

KEY MESSAGES

- Tobacco is used by the youth all over India with a wide range of variation among states.
- Two in every ten boys and one in every ten girls use any tobacco product.
- There is no statistical difference in rural–urban current tobacco use among students aged 13–15 years.
- Many youth believe that tobacco is good for the teeth or health.
- Early initiation before the age of 10 years is increasing.
- States having higher levels of curricular teaching have a low prevalence of tobacco use by students.

3·5

Key Selected Studies and Estimation of the Number of Tobacco Users

In this section, key studies selected as a basis for estimation of the number of tobacco users are described and an estimate of this number is attempted.

Key selected studies

The major source material used for this study is tabulated data from the special report: *Consumption of tobacco in India, 1993–1994* of the National Sample Survey Organization (NSSO).[48] This nationwide survey was undertaken as the 50th round of the National Sample Survey (NSS), using statistical sampling techniques. A total of 115,354 households located in 6951 villages and 4650 urban blocks were visited and information on tobacco use including product types were obtained for all members aged 10 years and above residing in each surveyed household. In the survey, tobacco use among a total of 432,393 individuals of all ages was recorded. This information was obtained from one member of the household, usually the male head. The NSSO tabulated the survey results for urban and rural residents gender-wise and age-wise for 32 states and union territories. In the report the age groupings were as follows: 10–14, 15–29, 30–44, 45–60 and 60+ years. The NSSO report also contains prevalence by type among various social groups.

The second National Family Health Survey (NFHS-2) was also a nationwide household survey conducted according to strict statistical sampling procedures during 1998–1999, on health-related practices and behaviour in 26 states. Over 90,000 households were surveyed and information on *paan*/tobacco chewing and tobacco smoking were obtained for 315,597 persons aged 15 years and above. Information was collected from the female head on members aged 15 years and above on tobacco use, and tabulated data are presented as tobacco chewers and tobacco smokers in the report. Data are not presented on the prevalence of combined use in that report, thus there is an overlap and the prevalence of chewing and smoking cannot be added together. However, some combined data have been published elsewhere.[49] In the NFHS-2 report, the age categorization adopted was 15–19,20–24,25–29, 30–39, 40–49, 50–59 and 60 years and above. These data were obtained from 25 states in the country.

Other than the above two nationwide survey reports, the results of a complete rural population survey have also been used to estimate the national prevalence in this section. This survey was conducted in the entire Karunagappally population located in Kollam district of Kerala during 1990–1998. These results were also used for estimating prevalence as this was a complete population survey conducted by face-to-face interviews with results tabulated for 5-year age groups by gender, which made it possible to obtain age-specific prevalence rates for males and females. This area is 'rural' according to the government census. The survey was undertaken to obtain the prevalence of lifestyle factors associated with cancer occurrence (personal communication Dr P. Jayalekshmi, P. Gangadharan and V.S. Binu, Karunagapally Cancer Registry).[93]

In Table 3.7 the number of persons interviewed in the NSS are shown gender-wise and according to urban–rural residence. The rural population was only 62% of the total studied.

Table 3.7 Number of persons covered in the NSS, 50th round (1993–1994) of all ages[48]

	Rural	Urban	Total
Male	137,265	86,144	223,409
Female	130,357	78,627	208,984
Total	267,622	164,771	432,393

Source: National Sample Survey Organization, 1998–1999

Table 3.8 Percentage of household members above 10 years of age who regularly use tobacco, by gender 1993–1994 - NSSO 50th round[48]

Residence	Males			Females		
	Chewers	Smokers	Any form	Chewers	Smokers	Any form
Rural	19.3	29.3	43.0	9.3	2.3	10.9
Urban	9.9	20.2	27.7	4.3	0.7	4.7

Source: National Sample Survey Organization, 1998–1999

In the survey of the rural Karunagappally population, information was obtained by interviewing 117,240 men and 138,883 women above 15 years of age.

Overall urban and rural prevalence

According to the NSSO report, overall in India in the population aged 10 years and above, 43% of rural males and 28% of urban males are regular tobacco users (Table 3.8). Among females the prevalence in rural areas was 11% and in urban areas it was 5%. It is evident that rural prevalence is higher than urban prevalence for both males and females and that male prevalence is higher than female prevalence overall.

Table 3.9 shows the observed prevalence rates of the NFHS-2 in rural and urban areas for tobacco chewing and smoking among males and females.

The prevalence in rural areas was 50% higher than in urban areas for both males and females, and for chewing tobacco and smoking. Smoking prevalence among rural females compared to urban females was more than 3 times higher. On an all-India level, the NFHS-2 estimated that 21% of persons aged 15 years and above chew *paan masala* or tobacco and only 3% of the women are reported to have ever smoked but 29% of men are current smokers. This survey also noted higher rates among rural and less educated men and women compared to urban residents.

In the rural Karunagappally population, current tobacco use prevalence figures in the population 15 years of age and above were 53.8% among males and 14.2% among females.

Table 3.9 Percentage of household members above 15 years of age who currently chew tobacco or smoke by gender 1998–1999 - NFHS-2[34]

Residence	Male		Female	
	Chew tobacco	Currently smoke	Chew tobacco	Currently smoke
Rural	31.3	32.6	13.8	3.1
Urban	20.8	21.4	8.8	0.9
Total	28.3	29.4	20.5	16.2

Source: International Institute for Population Sciences, 2000

Age-specific prevalence

Table 3.10 shows that the prevalence increased with age. Among males the rates decreased after 60 years but not in females.

Table 3.10 Age-specific prevalence (%) among males and females of regular tobacco users in rural and urban areas, NSS 1993–1994[48]

Age Group	Male		Female	
	Rural	Urban	Rural	Urban
10-14	1.3	0.4	0.9	0.2
15-24	19.1	8.7	4.6	1.2
25-44	61.3	40.7	12.2	4.5
45-59	72.3	50.9	20.4	11.4
60+	65.0	39.5	21.2	13.0
Total	43.0	27.7	10.9	4.7

Source: National Sample Survey Organization, 1998–1999

A similar pattern is seen in the age-specific prevalence distribution from the NFHS-2, as shown in Table 3.11.

Table 3.11 Age-specific prevalence of tobacco use in males and females, NFHS-2[34]

Age group (years)	Male		Female	
	Chew tobacco	Currently smoke	Chew tobacco	Currently smoke
15–19	9.4	4.4	2.1	0.2
20–24	20.3	13.7	4.3	0.6
25–29	28.0	25.1	8.0	1.1
30–39	34.1	37.6	12.3	2.2
40–49	35.6	45.0	18.6	4.0
50–59	35.4	45.3	22.8	5.7
60+	37.6	38.6	25.0	5.3
Total	28.3	29.4	20.5	16.2

Source: International Institute for Population Sciences, 2000

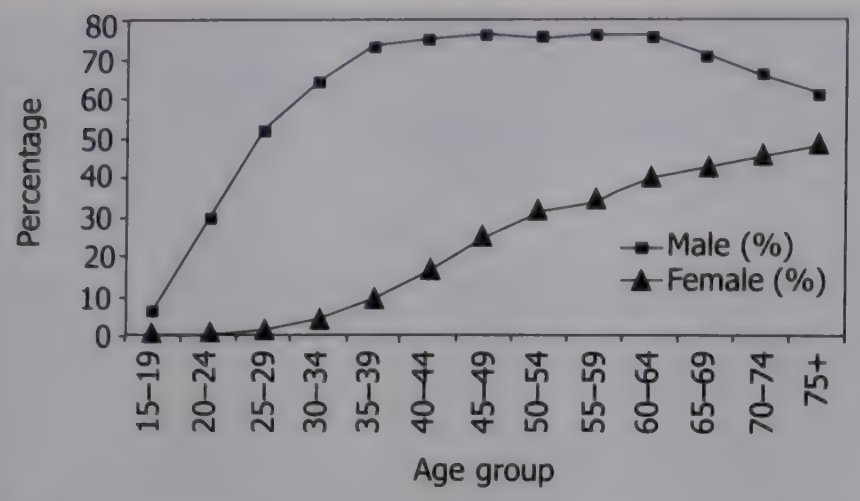


Fig. 3.4 Age-specific prevalence rates among current tobacco users Karunagappally *taluk*, 1990–1998

Table 3.12 Prevalence of tobacco use in any form by ever-users per 1000 rural and urban males and females (10+ years of age), States and Union Territories, India, NSS, 1993–1994[48]

State	Male		Female	
	Rural tobacco users (%)	Urban tobacco users (%)	Rural tobacco users (%)	Urban tobacco users (%)
Andhra Pradesh	43.9	26.2	12.3	4.1
Arunachal Pradesh	47.9	37.5	28.8	16.2
Assam	52.7	44.6	11.1	5.3
Bihar	47.6	33.0	6.0	3.6
Goa	22.0	23.8	5.5	4.2
Gujarat	42.9	28.6	9.1	3.5
Haryana	46.8	33.7	6.2	2.1
Himachal Pradesh	41.7	28.1	3.8	3.1
Jammu and Kashmir	38.2	19.8	3.2	0.5
Karnataka	36.6	24.0	9.6	3.2
Kerala	34.6	31.5	6.7	4.6
Madhya Pradesh	54.0	33.6	12.0	7.2
Maharashtra	45.4	25.4	24.0	8.0
Manipur	45.5	35.4	21.5	13.2
Meghalaya	62.2	53.2	31.9	13.1
Mizoram	69.8	66.9	63.2	57.4
Nagaland	31.9	34.1	1.7	–
Orissa	56.2	41.8	44.8	24.1
Punjab	12.8	18.0	0.3	0.3
Rajasthan	45.8	31.4	4.8	3,8
Sikkim	52.6	36.2	4.6	0.6
Tamil Nadu	28.4	23.4	9.2	4.0
Tripura	56.1	50.7	21.1	24.6
Uttar Pradesh	47.6	31.5	7.7	3.0
West Bengal	52.7	44.4	10.6	6.6
Andaman and Nicobar	53.3	43.4	19.9	9.7
Chandigarh	38.1	30.2	1.3	1.3
Dadra and Nagar Haveli	56.7	28.2	5.6	3.1
Daman–Diu	26.8	21.0	7.2	0.5
Delhi	43.4	25.2	3.5	1.4
Lakshadweep	38.3	43.5	21.4	14.9
Pondicherry	23.2	16.6	4.8	2.1
All India	45.3	29.9	11.8	5.1

Source: National Sample Survey Organization, 1998–1999

In Fig. 3.4, the age-specific prevalence curves plotted against age for males and females are shown for the population of Karunagapally *taluk*, Kollam district, Kerala. Among males, the prevalence was above 70% in the age range of 35–69 years. As in the NFHS-2 and the NSS-50th, the prevalence declined at older ages in men but not in women.

State-wise prevalence

In Table 3.12, the prevalence of tobacco use per 1000 individuals (not percentage) aged 10 years and above in each state and territory is given. The variations in tobacco use prevalence that exist between states are evident. Among rural males in Punjab, the prevalence was 12.8% but it was 69.8% in Mizoram. Among urban males, the lowest rate was seen in Pondicherry at 16.6% and the highest prevalence of 66.9% was noted again in Mizoram. Similar variations in prevalence were noted among women also. Among the rural and urban women of Punjab only 0.3% were tobacco users but the prevalence among rural females in Mizoram was 63.2% and urban 57.4%. The higher prevalence in rural areas and among males is true for most states and territories. Only in Goa, Nagaland, Punjab and Lakshadweep, the rates in urban males were higher than in rural males. In Tripura, urban females had a higher rate than rural ones.

Estimation of tobacco use prevalence

Methods

A simple method is adopted for estimating the number of tobacco users in India for the year 2004. It was thought sufficient to consider only three variables: rural versus urban residence, age and gender. State-wise differences and socioeconomic differences were not considered in the estimation procedure for the whole country, given the difficulties involved. The available rates were projected onto the 2004 population estimated for India in the Registrar General's report 1996.[95] In this report, the

estimated population of India (all ages) on 1 March 2004 was 547,556,000 males and 512,468,000 females. The distribution of the population by 5-year age groups is also given in the publication. This estimated population was proportionately assumed to be composed of 27% urban and 73% rural in each age group and the urban and rural age distribution was obtained.

The prevalence of tobacco use for rural and urban areas of residence obtained from the NSSO age-specific rates were directly used to estimate the number of users. These were obtained separately for males and females in each age group. A similar compilation was also done using the Karunagappally age-prevalence rates of tobacco users for comparison purposes.

Estimations

By using the NSSO age-specific rates, regular consumers of tobacco (aged 10 years and above) were 186,482,598 in rural India and 49,337,216 in urban areas. Thus, the total number of tobacco users was 235,819,814 in 2004.

Age-specific estimation based on the Karunagappally 5-year age-specific prevalence rates of current tobacco use yields a total of 195,446,246 male users and 44,607,056 female users in 2004, totalling 240,053,302 users in India. It is essential to mention here that the Karunagappally rates are obtained for the age groups of 15 years and above, whereas the NSSO reports are for the ages of 10+ years and above. Thus, the Karunagappally rates would be lesser by the number of male and female users in the 10–14 years age group, which would be 4–5 million.

A further estimation was done of the number of tobacco users (smokers, chewers) among persons aged 30 years and above. This was used to estimate chronic disease burdens (Table 3.13).

Table 3.13 All-India tobacco use prevalence and estimated number of users (chewers, smokers) in the 30+ age group[94]

Men		Women	
Chewers	Smokers	Chewers	Smokers
35.4%	41.2%	18.2%	3.9%
75,479,712	87,873,798	36,762,373	7,833,853

Source: National Family Health Survey-2 age-specific data from International Institute for Population Sciences, 2000

Discussion

Prevalence studies of tobacco use in India have shown wide variations between urban and rural areas, regions, age, gender, education, and other sociodemographic variables across the country. Urban–rural differences are an especially important consideration for estimation, as several surveys have shown that the prevalence of tobacco use is higher in rural populations compared to urban areas and, in India, 73% of the population lives in rural areas. Also, tobacco use is more common among men than women (NSSO, NFHS-2).[48,49]

The two estimates of prevalence of the number of users differ by around 10 million when the age considered is 10+; thus, the estimated number indicates that in 2004 there are about 250 million users aged 10+ years in the country.

The NSSO is a nationwide study and is thus important for such national estimation. The NSSO estimates gave the number of tobacco users as 235.8 million.

The Karunagappally area is rural, hence using this the prevalence may have inflated the estimated number. However, it must be pointed out that in Kerala there is no 'rural' area as seen in other parts of the country. Sometimes the entire state is termed as an extended suburban area. It may also be underscored that there was a high literacy rate—more than 85% in Karunagappally, which is unusual in a rural setting. The prevalence of tobacco use was also high. Using the age-specific prevalence of Karunagappally, the estimated number is 250 million users in 2004 in the 10+ years age group.

By a direct estimation using the prevalence percentage of the NFHS-2, Rani *et al.*[49] estimated

that the total number of users were 195 million—154 million men and 41 million women, probably using the base year 1998–1999.[49] The NSSO survey was done earlier in 1993–1994 and the Karunagappally population survey was undertaken during 1990–1998. Because it was based on house-to-house visits and face-to-face interviews it took 8 years to complete.

An earlier estimate made for 1996 was 184 million tobacco users (150 million males and 34 million females).[96]

It is clear that the estimates obtained here suffer from limitations. The most important limitation is that the surveys were not designed to collect information on tobacco use. Surrogate responses were used, which can introduce inaccuracies and biases. Also, the household was used as a sampling unit rather than an individual, and it was not possible to make appropriate statistical adjustments for that while doing the estimation. It is thus imperative that national-level surveys be undertaken periodically with the objective of finding out the prevalence of tobacco use in India.

3.5 KEY SELECTED STUDIES AND ESTIMATION OF THE NUMBER OF TOBACCO USERS

KEY MESSAGES

- There are currently an estimated 250 million tobacco users aged 10 years and above in India.
- There are currently about 240 million tobacco users aged 15 years and above (195 million male users and 45 million female users) in India.

Appendix

Chemistry and Toxicology of Tobacco Products Used in India

Chemistry of tobacco

Both tobacco and tobacco smoke contain a large variety of chemicals. Nearly 3000 chemical constituents have been identified in smokeless tobacco, while close to 4000 are present in tobacco smoke. These include alkaloids such as nicotine, nornicotine, cotinine, anatabin, anabasin; aliphatic hydrocarbons present in the waxy leaf coating and hundreds of isoprenoids that give the aroma to tobacco. Phytosterols such as cholesterol, campesterol, etc. and alcohols, phenolic compounds, chlorogenic acid, rutin, carboxylic acids and several free amino acids are present in tobacco.[97] In addition, a wide range of toxic metals including mercury, lead, cadmium, chromium and other trace elements have been found in Indian tobacco.[98]

Dependency on tobacco use is related to the pharmacological effects of nicotine present in tobacco leaves and in tobacco smoke. There are at least 15 additional alkaloids that are structurally related to nicotine. Nornicotine and anabasin have a similar pharmacological action to that of nicotine but only 20%–75% potency. The alkaloids nicotine and nornicotine give rise to carcinogenic N-nitrosonornicotine (NNN), while another potent carcinogen 4-methyl-nitrosamino-1-(3pyridyl)-1-butanone (NNK) is derived from nicotine. N-nitrosoanatabin (NAT) and N-nitrosoanabasin are other N-nitrosamines derived from the alkaloids anabasin and anatabin, respectively. Secondary amines are also known to combine with nitrites to form carcinogenic nitrosamines. N-nitrosamines are formed during the fermentation and curing of tobacco, i.e during processing, as well as storage. Both NNN and NNK are present in high concentrations in smokeless tobacco and tobacco smoke.

Estimation of moisture content, pH, nitrite, nitrate, nicotine and other tobacco-specific alkaloids in various smokeless tobacco products (*zarda*, *Pandharpuri*, and three types of *masheri* and *rawa* tobacco [tobacco dust]), tobacco used for *beedi* manufacture and tobacco fillers from *beedis* and cigarettes, revealed that the nicotine content of *Pandharpuri* tobacco was the maximum followed by *zarda* tobacco as shown in Table 3.14.[99] These two types also showed a high content of nornicotine which is converted to carcinogenic NNN during curing. Alkaloid levels were also two-fold higher in *beedi* tobacco fillers than in cigarette fillers or processed *beedi* tobacco. The nitrite content was two-fold higher in cigarette tobacco. Nair *et al.*[100] examined total nitrosamine content and tobacco-specific nitrosamines (TSNAs) including NNN, NAT and NNK in *masheri*, a pyrolysed form of tobacco used commonly in Maharashtra as a dentifrice. The total nitrosamine content of brown and

Table 3.14 Moisture, pH and alkaloid content of chewing tobacco products[99]

Tobacco product	Moisture (%)	pH	Nitrate (mg/g)	Nitrite (µg/g)	Nicotine (mg/g)	Nicotine (mg/g)	Nornicotine (mg/g)	Anabasin (mg/g)	Anatabin (mg/g)	Cotinine (mg/g)
Pandharpuri	3.99	5.15	4.66	23.05	55.25	54.77	17.11	0.31	0.63	0.37
Zarda	11.58	5.02	5.00	30.80	25.79	26.20	10.23	0.09	0.92	0.15
Masheri Br. 1	7.69	6.33	6.49	11.07	5.52	6.02	0.46	0.05	0.04	0.10
Masheri Br. 2	5.80	7.12	2.26	9.25	18.90	23.08	3.66	0.07	0.38	0.43
Rawa tobacco	9.52	5.18	8.56	9.01	14.35	16.91	4.23	0.72	0.91	0.09
Rawa masheri	4.29	5.89	4.49	16.40	5.60	4.99	0.34	0.74	0.09	0.11

Source: Pakhale *et al.* 1997

black *masheri* samples was higher than that of the tobacco used for their preparation. NNN levels were higher in *masheri* than in the tobacco from which it was prepared. Nair *et al.*[101] detected high amounts of NNN and NNK in snuff. Analysis of TSNAs in cigarette, *chutta*, cigar and *beedi* tobacco fillers showed minimum amounts of NNN, NAT and NNK in tobacco fillers of a filtered cigarette but the levels were higher in non-filtered cigarette fillers. One of the *chutta* tobacco fillers had the highest amount of TSNAs among the smoking products.[101] Another study[102] reported higher levels of nicotine, nornicotine, anabasin, anatabin and cotinine in *beedi* and *chutta* tobacco fillers than in cigarette fillers.

Tobacco smoke is known to be rich in naphthalene and polycyclic aromatic hydrocarbons (PAH). In studies from India, high levels of benzapyrene were reported in *masheri*, snuff and two samples of chewing tobacco.[100,103] Other tumorigenic agents isolated from smokeless tobacco and tobacco smoke and identified by chemical analysis were volatile aldehydes including formaldehyde, acetaldehyde and crotonaldehyde, volatile N-nitrosamines, N-nitrosamino acids, lactones, polycyclic aromatic hydrocarbons, some metals and polonium-210, which is radioactive.

Pakhale *et al.*[99] analysed the levels of nitrate, nitrite, and tobacco-specific alkaloids in processed *beedi* tobacco used for *beedi* manufacture, and tobacco fillers obtained from ready to smoke *beedis* and cigarettes sold in the market. The nitrate content of the three tobacco varieties was similar while the nitrite content was two-fold higher in cigarette tobacco (Table 3.15).

Information on the chemicals present in tobacco smoke is based on machine smoking of *beedis* and cigarettes under standard laboratory conditions. Tobacco smoke is composed of a volatile gaseous and a particulate phase. Some 500 gaseous compounds including nitrogen, oxygen, hydrogen, methane, carbon monoxide, carbon dioxide, ammonia, hydrogen cyanide and benzene have been identified in the volatile phase of cigarette smoke, which account for about 95% of the weight of cigarette smoke; the other 5% is accounted for by particulate matter. At an alkaline pH, nicotine is detected in the gaseous phase also, which seems to add to its absorption. The vapour phase also contains volatile carcinogenic aldehydes, ketones, nitric oxides and volatile nitrites along with additional minor constituents.

There are about 3500 different compounds in the particulate phase, of which the major one is the alkaloid nicotine. Other alkaloids include nornicotine, anatabin and anabasin. Particulate matter without its alkaloid and water content is called tar. Many carcinogens, including polycyclic aromatic hydrocarbons, N-nitrosamines including TSNAs and aromatic amines have been identified in cigarette tar. Chlorinated hydrocarbon insecticides, N-alkylcarbazols, fluoranthenes, benzofluorones, phenyllindane, pyrenes and cyclopentano-phenanthrenes have been detected in a subfraction of smoke tar. The major carcinogens present in the particulate phase of tobacco smoke are polonium-210, volatile/non-volatile N-nitrosamines and TSNAs. In addition, co-carcinogenic agents such as pyrene, fluoranthene, dichlorostilbene and catechols have been identified in the particulate phase of cigarette smoke.

Table 3.15 Moisture, pH, nitrate, nitrite and alkaloid content of *beedi*/cigarette fillers[99]

Tobacco product	Moisture (%)	pH	Nitrate (mg/g)	Nitrite (µg/g)	Nicotine (mg/g)	Nicotine (mg/g)	Nornicotine (mg/g)	Anabasin (mg/g)	Anatabin (mg/g)	Cotinine (mg/g)
Beedi filler	8.21	5.07	2.28	16.89	40.75	42.05	3.70	0.35	1.65	0.19
Cigarette tobacco	12.81	5.00	1.64	38.55	16.23	14.19	1.56	0.03	0.22	0.05
Beedi tobacco	10.26	5.09	1.15	13.43	37.70	35.15	3.41	0.10	1.53	0.16

Cigarette/*beedi* tobacco: tobacco collected from cigarette/*beedi*; *Beedi* filler: tobacco used for preparation of *beedis*

Source: Adapted from Pakhale *et al.* 1997

Toxic effects of tobacco

The toxic effects of tobacco include mutagenicity, carcinogenicity and genetic damage, as shown by various assays, cell culture studies, animal experiments and tests on humans who either use tobacco or work in processing it.

Mutagenicity

An ethanolic extract of the *Pandharpuri* brand of chewing tobacco and *masheri*,[103,104] extracts of *beedi* tobacco[105] and *beedi*/cigarette smoke condensates[106,107] were mutagenic in the Ames assay that uses *Salmonella typhimurium* strains for detecting the mutagenic activity of chemicals. Urine samples from *masheri* users,[108] tobacco chewers[104] and *beedi* industry workers,[105] and gastric fluid from tobacco chewers[109] were also mutagenic. The levels of PAH-induced DNA adducts that can to lead to mutations were higher in the skin of mice administered total particulate matter from the smoke of *beedis.*[110]

Beedi/cigarette smoke condensates, and an ethanol extract of *Pandharpuri* tobacco induced mutation in Chinese hamster V79 cells and increased micronucleated cell frequency in mouse bone marrow cells.[106] An extract of snuff inhibited the growth of mouse tongue epithelial cells in culture.[111] A single, 24-hour treatment of hamster tracheal epithelial cells in culture with an extract of *beedi* tobacco decreased the growth rate of cells, with respect to untreated control cells, increased the rate of DNA synthesis, ornithine decarboxylase activity and the number of cells in the DNA synthesis phase. Repeated exposure to the extract, however, led to a significant increase in cell number, suggesting that chronic inhalation of tobacco dust among *beedi* industry workers may stimulate proliferation of the tracheal cells and thereby increase the risk for the development of pulmonary disorders including cancer.[112]

Carcinogenicity

In a study that attempted to induce cheek pouch tumours in hamsters, snuff application alone resulted in a high incidence of tumours in the forestomach but not cheek pouches of treated animals.[111] Other studies in mice revealed that application of an extract of *masheri* to the skin of the back induced skin tumours in 20% of mice,[113] while application of an extract of *beedi* tobacco promoted the growth of skin papillomas induced by a tumour-initiating carcinogen.[114] Tumours were induced in the liver, forestomach and oesophagus of mice treated with *beedi* smoke condensate in another study.[115]

Genetic damage in humans

Cytogenetic studies in tobacco users and non-users have shown that the frequency of chromosomal damage denoted by chromatid breaks and gap type aberrations is significantly higher among those who chew tobacco with other ingredients such as betel nut,[116,117] or tobacco with lime,[118] *masheri* users,[118] and those who chew tobacco containing betel quid or *gudhaku,* a tobacco-containing chewing product.[119] Chronic use of tobacco was associated with a significantly diminished ability to detoxify foreign chemicals including those present in tobacco.[118,120] Chromosomal damage is known to occur at a higher frequency in the lymphocytes of smokers, workers employed in cigarette factories[121] and those engaged in processing of tobacco for the manufacture of *beedis.*[120,122] Micronucleated cells are more commonly seen in the buccal epithelial cells of tobacco users or those with occupational exposure to tobacco.[123,124]

APPENDIX: CHEMISTRY AND TOXICOLOGY OF TOBACCO PRODUCTS USED IN INDIA

KEY MESSAGES

- Nearly 3000 chemical constituents have been identified in smokeless tobacco, while close to 4000 are present in tobacco smoke, many of them harmful.
- Dependency on tobacco use is related to the pharmacological effects of nicotine and related alkaloids present in tobacco leaves and tobacco smoke.
- Tobacco contains tobacco-specific nitrosamines (TSNAs) formed during fermentation and curing of tobacco, which are carcinogenic.
- Tobacco smoke is known to be rich in naphthalene and polycyclic aromatic hydrocarbons (PAH), which are known carcinogens. Studies from India report high levels of benzapyrene in *masheri*, snuff and two samples of chewing tobacco.
- There are about 3500 different compounds in the particulate phase of tobacco smoke, of which the major one is the alkaloid nicotine. Particulate matter in tobacco smoke without its alkaloid and water content is called tar. Many carcinogens, including PAH, N-nitrosamines including TSNAs and aromatic amines have been identified in cigarette tar. Insecticides are also present.
- The toxic effects of tobacco include mutagenicity, carcinogenicity and genetic damage, as shown by various assays, cell culture studies, animal experiments and tests on humans who either use tobacco or work in processing it.

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Health Consequences of Tobacco Use

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The health consequences of smoking habits, especially of the globally most common form, cigarette smoking, have been studied extensively in many parts of the world. The US Surgeon General's Report, 2004 reports that smoking harms almost every organ of the body, causing many diseases and reducing the health of the smokers in general. There is sufficient evidence to infer a causal relationship between smoking and vascular diseases such as coronary heart disease, stroke and subclinical atherosclerosis, respiratory diseases such as chronic obstructive pulmonary disease and pneumonia, adverse reproductive effects and cancer at ten sites (Table 4.1).[1]

Globally, tobacco is responsible for the death of 1 in 10 adults (about 5 million deaths each year) with 2.41 (1.80–3.15) million deaths in developing countries and 2.43 (2.13–2.78) million in developed countries.[2, 3] Among these, 3.84 million deaths were in men. The leading causes of death from smoking were found to be cardiovascular diseases (1.69 million deaths), chronic obstructive pulmonary disease (0.97 million deaths) and lung cancer (0.85 million deaths).[3] Fifty per cent of unnecessary deaths due to tobacco occur in middle age (35–69 years), robbing around 22 years of normal life expectancy.[4]

In developed countries, smoking is estimated to cause over 90% of lung cancer in men and about 70% of lung cancer among women. In these countries, 56%–80% of deaths due to chronic

Table 4.1 Health consequences related to tobacco exposure[1]

Heart and blood vessel diseases

- Atherosclerosis, coronary heart disease
- Cerebrovascular diseases
- Abdominal aortic aneurysm
- Peripheral vascular disease (may cause gangrene in legs)
- Erectile dysfunction or impotence (atherosclerosis and endothelial dysfunction of the internal pudendal and penile arteries)

Cancer

- Cancerous lesions with proven association: Cancers of the bladder, cervix, oesophagus, kidney, larynx, lung, oral cavity and pharynx, pancreas, stomach and leukaemia
- Cancerous lesions with suspected association: Cancers of the colorectum, liver and breast
- Precancerous lesions: Leucoplakia, erythroplakia of the oral cavity [6–8]

Respiratory diseases

- Chronic obstructive pulmonary disease: Chronic bronchitis, chronic obstructive pulmonary disease mortality and morbidity
- Acute respiratory illnesses: Pneumonia, bronchitis and other respiratory infections
- Respiratory effects mediated *in utero*: Reduced respiratory function in infants
- Respiratory effects in childhood and adolescence: Decreased physical fitness, unfavourable lipid profile, potential retardation in the rate of lung growth and the level of maximum lung function among children and adolescents
- Respiratory effects in adulthood: Acceleration of age-related decline in lung function among adults
- Other respiratory effects: Increased cough, phlegm production, wheezing, respiratory infections and dyspnoea

Reproductive effects

- Foetal death and stillbirth: Sudden infant death syndrome (SIDS)
- Fertility: Delayed conception (primary and secondary infertility)
- Low birth weight: Foetal growth restriction and low birth weight
- Pregnancy complications: Premature rupture of membranes, abruptio placentae, placenta praevia and preterm delivery

Other effects

- Cataract
- Diminished health status/morbidity, adverse surgical outcomes related to wound healing and respiratory complications
- Low bone density among postmenopausal women, and risk of hip fractures, peptic ulcer disease, periodontitis
- Root–surface dental caries*

*Evidence is suggestive but not sufficient to infer a causal relationship between smoking and disease

respiratory disease and 22% of cardiovascular deaths are attributable to tobacco. The attributable mortality is greater in males (13.3%) than in females (3.8%). Globally, the attributable fractions for mortality due to tobacco smoking were about 12% for vascular disease, 66% for cancer of the trachea, bronchus and lung cancers combined, and 38% for chronic respiratory disease.[5]

Globally, the disease consequences of tobacco use (smoking) have been more extensively and better documented than perhaps for any comparable risk factor. This is partly due to the fact that for decades, until recently, the tobacco industry kept on challenging the validity of the findings and refused to accept results that were long accepted by all health scientists. In part, it is also due to the fact that the spectrum of the diseases caused by tobacco use is very large. Even now, as additional research findings become available, more and more diseases are getting linked to tobacco. Tobacco use causes serious diseases because, in addition to nicotine, tobacco contains several toxic and carcinogenic chemicals. The most important group is perhaps the tobacco-specific nitrosamines. Nitrosamines may be found and permitted in items meant for

human consumption but in extremely small quantities. Compared to these, nitrosamines found in tobacco products are in abundance and highly carcinogenic. Tobacco smoke contains another class of highly carcinogenic chemicals called polycyclic aromatic hydrocarbons. In addition, smokers ingest a highly toxic gas, carbon monoxide. This gas combines with haemoglobin in the blood and reduces its oxygen-carrying capacity. Earlier, it was thought that the amount of 'tar' (condensate formed by tobacco smoke) in a tobacco product was a reasonable measure of its toxicity. However, it is now realized that there are also several toxic chemicals in the gaseous, vapour and particulate phases.

In India, where tobacco is smoked, chewed and applied in a wide variety of ways, as discussed in Chapter 3, a considerable number of research studies have shown that these forms of tobacco use are causal risk factors for many types of cancers and other diseases.[9,10]

The first part of Chapter 4 reviews the excess mortality among different types of tobacco users as reported in studies from different parts of India. The rest of this chapter is devoted to evidence that tobacco as used in India causes specific diseases—cancer, lung diseases, vascular diseases and acute health problems suffered by tobacco harvesters.

Box 4.1 What do major tobacco companies have to say about tobacco and disease?

The truth about tobacco-induced diseases is now displayed even on the websites of large international tobacco companies. One of them states: 'Smoking kills and is addictive.'[a] Further, it says 'Cigarette smoking causes lung cancer, heart disease, emphysema and other serious diseases in smokers. Smokers are far more likely than non-smokers to develop diseases such as lung cancer. There is no such thing as a "safe" cigarette.' In response to the question 'Is exposure to second-hand smoke as bad for your health as being a smoker?', the same website says: 'Public health authorities say that secondhand smoke—also known as "passive smoking", "environmental tobacco smoke" and "ETS"—causes serious diseases, including lung cancer and heart disease, in non-smokers, as well as conditions in children such as asthma, respiratory infections, cough, wheeze and middle ear infection. People should be guided by the conclusions of government and public health officials when deciding whether to stay in places where there is secondhand smoke or, if they are smokers, when and where to smoke around others.'

The website of another tobacco major says: 'Along with the pleasures of cigarette smoking come real risks of serious diseases such as lung cancer, respiratory disease and heart disease. We also recognize that, for many people, it is difficult to quit smoking.'[b] Yet another company admits that it 'manufactures products that have significant and inherent health risks for a number of serious diseases, and may contribute to causing these diseases in some individuals. There is universal awareness of the conclusions of the Surgeon General, and public health and medical officials that smoking causes serious diseases, including lung cancer and heart disease.'[c]

These belated admissions by the tobacco companies came after successful litigation that pinned responsibility on them for causing damage to health, by marketing their products without adequate disclosure. However even these concessions to truth do not portray the horrendous magnitude of tobacco related diseases and deaths which wreak havoc upon humanity across the globe. For this grim picture, we must look elsewhere (see estimates by WHO).[d]

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c. Tobacco issues. Available from URL: http://www.rjrt.com/TI/tobacco_cover.asp (accessed on 11 November 2004).
d. World Health Organization. Available from URL: http://www.who.int/topics/tobacco/en/ (accessed on 11 November 2004).

4.1

Overall (all-cause) Mortality due to Tobacco

It is well established that overall mortality rates for cigarette smokers are 60% to 80% higher than for non-smokers. Similarly, in India, *beedi* smokers are reported to have significantly higher death rates compared to non-tobacco users.[11–13]

There are differences in the nature of effects of *beedi* and cigarette smoking. For instance, cancer deaths due to cigarette smoking are primarily related to lung cancer, which accounts for over 70% of tobacco-related cancer deaths and a third of all cancer deaths in the USA. In India, where *beedi* smoking and tobacco chewing are common habits, the major effects of tobacco are seen in the oral cavity, pharynx and oesophagus, which together account for a large proportion of the tobacco-related cancers that occur in the country.[11,14]

The information on excess mortality among tobacco users is available from four follow-up (cohort) studies and one case–control study.

A 10-year cohort study was conducted among 10,287 individuals aged 15 years and above in villages of the Ernakulam district, Kerala, during 1967–1976.[13] Among men, 50% were smokers, 15% were chewers and 21% had mixed practices (smoking and chewing), whereas among women, very few (<1%) smoked and 41% were chewers. The vast majority of smokers (~90%) were *beedi* smokers. The overall age-adjusted relative risk estimates revealed a 40% higher risk for tobacco users compared to non-tobacco users. There was one-and-a-half-fold excess mortality among male smokers (age-adjusted relative risk = 1.5). Chewers among women (age-adjusted relative risk = 1.3) and mixed users among men (age-adjusted relative risk = 1.4) also had significantly higher risk of dying than non-users.[13]

A similar 10-year follow-up study of a random sample of 10,169 persons aged 15 years and above was conducted in the Srikakulam district of Andhra Pradesh (1967).[15] The dominant habit in Srikakulam district was reverse smoking (*see* Section 3.1). Conventional smoking was practised by about 30% of the men, which included *beedi* and *chutta* smoking. Tobacco chewing was less popular at that time (4% of men and 3% of women), and both chewing and smoking were practised by 12% of men. Around 19% of men and 33% of women did not use tobacco in any form. After 10 years' follow up, 1432 deaths were recorded for the 80,612 person-years available for analysis. Men as well as women who smoked in the reverse fashion had nearly double the rate of death, adjusted for age, compared to the rates for non-users of tobacco in any form (relative risk [RR] = 1.95 and 1.91, respectively). The age-adjusted relative risk of death for conventional smokers was also nearly two-fold (RR = 1.8) compared to non-users of tobacco.[15]

The Mumbai cohort study (ongoing since 1992) is a population-based study of 99,598 individuals 35 years of age. The baseline survey was conducted on a house-to-house basis during 1992–1994. The survey population consisted largely of individuals belonging to the lower and lower–middle classes.[16] Interim results from follow up of 52,568 individuals were published.[12] Updated follow-up results are reviewed here.[14]

In an active follow up after an average of 5.5 years, 97,244 individuals (98%) were traced. Among these, 7531 deaths were recorded. A total of 210,129 person-years of follow-up was accrued among men, of which 27% was contributed by smokers, 46% by smokeless tobacco users and the remaining 27% by non-users of tobacco. Among male smokers, 45% were cigarette smokers and 55% were *beedi* smokers (some smoked cigarettes as well).

Among smokeless tobacco users, men who used *mishri* (including those who also used other forms of tobacco) accounted for 55% of the person-years among men and 83% of the person-years among women. The next most common habit was *paan*–tobacco (betel quid) chewing, accounting for 25% of the person-years among men and 11% among women.[14]

Since age and education play a role in influencing mortality, the analysis was adjusted for these factors. Both men and women who used smokeless tobacco had a 20% greater risk of death than non-tobacco users (RR = 1.2). Those who smoked had a 60% greater risk of death than non-users of tobacco (RR = 1.6). When the type of smoking was analysed separately, cigarette smokers had a 36% greater risk of death and *beedi* smokers a 68% greater risk of death than non-users of tobacco. Those who smoked six or more *beedis* per day had a 75% greater risk of death (RR = 1.75) compared to non-users of tobacco. Those who smoked a fewer number of *beedis* per day had a 40% higher risk than non-users, demonstrating a dose–response relationship. Age-specific mortality rates among *beedi* smokers were higher than among non-users of tobacco across all age groups, the excess risk being twice as high for people less than 50 years of age compared to older people (RR = 3.2 vs RR = 1.5).[14]

A case–control study comparing 43,000 adult male deaths with 35,000 living controls, was reported from urban (Chennai) and rural areas (Viluppuram district) of Tamil Nadu, southern India (1995–2000). In the urban study area, 59.6% of the men between 25 and 69 years of age who had died from medical causes (cases) had been smokers (52.2% in rural areas), as against only 39% of the corresponding age-matched controls (42.8% in rural areas). Smokers in that age group experienced a two-fold higher risk of death than non-smokers in the urban areas (RR = 2.1; 95% CI: 2.0–2.2) and a 60% greater risk (RR = 1.6; 95% CI: 1.5–1.7) for rural areas (adjusted for age, education and tobacco chewing).[11]

Mortality estimates

Based on older studies

These estimates are from population-based house-to-house studies from 7 rural areas of India (from 5 areas based on random samples of over 10,000 individuals aged 15 years and over in each area; from one area based on a sample of 1,000,000 individuals aged 15 years and above; and from one area based on a sample of 35,000 individuals aged 35 years and above). In addition, the percentage of tobacco users among men over the age of 30 years is available from an older survey in three areas of India. The percentage of tobacco users in these areas ranged from 44% to 74%. Among women, the prevalence of tobacco use ranged from 15% to 67%, whereas among men it ranged from 62% to 86%. On the basis of population figures for 1986 and the latest available age-specific death rates, it was estimated that in India, among individuals aged 15 years and above, about 2.76 million deaths occur annually among men, and 2.3 million deaths among women. Applying minimum estimates, about 630,000 deaths annually were attributable to tobacco at that time.[17]

Based on recent studies

The estimation of tobacco-attributable mortality for the 35–69 years age group has been reported from the case–control study in Chennai and similar estimates were also reported from the Mumbai cohort study. Gajalakshmi *et al.* estimated that about a quarter of male *beedi* or cigarette smokers at 25–69 years of age are killed by their smoking and overall, smoking caused 552,000 deaths among men in India aged 25–69 years. Considering the prevalence of smokeless tobacco use among women in India to be 15% and of smoking among them to be 3%, about 5·9% deaths in women 35–69 years old can be attributed to tobacco use. This translates into 86,000 deaths among women per year, out of 1,453,000 all-cause deaths in women in India in the 30–69 years age group.[18] Gupta *et al.* used slightly different parameters but came up with

very similar estimates. Thus the total estimated all-cause premature deaths in men and women in India due to tobacco use can be estimated from this study to be around 638,000 per year.[14]

Tuberculosis is an extremely important cause of death, contributing about a million adult deaths in India.[11,14] Mortality from tuberculosis was reported to be four times as high among smokers (mainly *beedis*) compared to non-smokers. Thus, about a quarter of all persistent smokers of cigarettes or *beedis* are killed by tobacco before the age of 70 years, and will lose about 20 years of life expectancy. A third of the deaths caused by smoking are from vascular disease and half are from tuberculosis or other respiratory diseases. Among Indian males, smoking causes half of all deaths from tuberculosis and a quarter of all deaths from any disease in middle age. Overall, smoking currently causes about 700,000 deaths per year in India, about 550,000 in men aged 25–69 years, about 110,000 in older men, and in much smaller numbers in women.[11] In addition, there are excess deaths due to smokeless tobacco use, which is common among men as well as women and also deaths due to exposure to second-hand smoke. These deaths have not been quantified, but it appears reasonable to assume that these will add at least another 100,000 deaths. Thus, a conservative estimate of tobacco-attributable mortality in India would be about 800,000.

These results demonstrate that *beedi* smoking and smokeless tobacco use are as important as cigarette smoking. Almost all the studies carried out in different parts of India reported a significantly high risk (RR ≥1.5) of all-cause mortality among *beedi* smokers. These findings have important implications for public health efforts to reduce tobacco use. As the younger generation now reports *beedi* smoking as well as tobacco use in other forms, preventive measures have to be taken to avoid long-term health effects.

4.1 OVERALL (ALL-CAUSE) MORTALITY DUE TO TOBACCO

KEY MESSAGES

- The relative risk for death due to tobacco use in cohort studies from rural India is
  - —40% to 80% higher for any type of tobacco use;
  - —50%–60% higher for smoking;
  - —90% higher for reverse smoking;
  - —15% and 30% higher for tobacco chewing in men and women, respectively;
  - —40% higher for chewing and smoking combined.
- An urban cohort study in Mumbai found the relative risk of dying was more than 50% higher for smokers and about 15% higher for smokeless tobacco users.
- An urban case–control study in Chennai found that the relative risk of dying for smokers was slightly higher than 2-fold.
- Overall, smoking currently causes about 700,000 deaths per year in India.

4.2

Tobacco and Cancer

Cancer is a public health problem worldwide. It affects all people from the young to the old; the rich to the poor; men, women and children. Of the several causes investigated for cancer, the use of tobacco has shown strong and consistent associations with cancer at several sites in the body.

Magnitude of disease

Presently, more than 10 million people globally are diagnosed with cancer every year. It is estimated that by 2020, there will be 15 million new cases every year. Cancer causes 6 million deaths every year, or 12% of deaths worldwide.[19]

The tobacco-related cancers reported by the Population-based Cancer Registries of Bangalore, Barshi (rural), Bhopal, Chennai, Delhi and Mumbai constitute 56.4% and 44.9% of cancers in males and females, respectively. The top five or six cancers in men are all tobacco-related cancers: of the lung, oral cavity, larynx, oesophagus and pharynx. In women, the leading cancer sites include those related to tobacco: cervix, oral cavity, oesophagus and lung, in addition to other cancers not considered to be tobacco related (breast and ovary).[20]

Global evidence

The International Agency for Research on Cancer (IARC) Monograph states that tobacco smoking is the major cause of lung cancer (all types) and is associated with oral cancer, cancers of the oropharynx and hypopharynx, oesophagus, stomach, liver, pancreas, larynx, nasopharynx, nasal cavity and nasal sinuses, urinary bladder, kidney and cervix, and myeloid leukaemia.[21] In addition, exposure to second-hand tobacco smoke has also been conclusively shown to be carcinogenic to the lungs.[22]

The US Surgeon-General's report for 2004 states that the evidence is sufficient to infer a causal relationship between smoking and cancer of the lung, oral cavity, larynx, oesophagus, urinary bladder, kidney, stomach and pancreas, uterine cervix, as well as acute myeloid leukaemia.[23]

Evidence for the causal role of tobacco in India

Case–control studies conducted in India on cancer at various sites have shown that both smoking and smokeless tobacco use (including tobacco with lime and *paan* with tobacco) cause elevated risks for intra-oral, oropharyngeal, oesophageal and cervical cancers, and cancer of the penis. They have shown that smoking in India causes elevated risks for cancer of the lungs, hypopharynx, larynx and stomach. In the following section, some examples are given. The current evidence for a causal association of tobacco use in India and cancer at various sites is based on case–control studies for specific anatomical sites. A brief summary is presented here, with the sites listed.[24]

Lung

A case–control study on lung cancer conducted in Chandigarh showed that ever-smoking men (i.e. those who ever smoked regularly) had a 5-fold higher risk (odds ratio [OR] = 5.0) and ever-smoking women had a two-and-a-half-fold higher risk (OR = 2.47) of developing lung cancer compared to non-smokers.[25]

Smoking *beedis*, *hookahs* and cigarettes was associated with similarly elevated risks. In a population-based case–control study in Bhopal, *beedi* and cigarette smokers had a 12-fold higher risk for lung cancer than non-smokers. A dose–response relationship was observed, indicating that the more often or the longer smokers used tobacco, the greater was their risk.[26]

Oral cavity and tongue

The relationship between oral cancer and tobacco use, especially chewing of *paan* (betel quid) with tobacco, has been reported since the early twentieth century[27] and more recently through a variety of epidemiological and clinical studies.[28]

All of the case–control studies conducted on tobacco and oral cancer in India show that the risk of oral cancer increases with the use of tobacco in various forms, compared to non-use of tobacco. Smoking increased the risk of oral cancer relative to non-smokers, and chewing (of tobacco or paan with tobacco) tended to have a higher risk for oral cancer than smoking. The risk of oral cancer for chewers of tobacco (in any form), compared to non-users was high to very high in different studies, with the risk for women being higher than the risk for men. For example, in a study in the three centres of Bangalore, Chennai and Thiruvananthapuram, women had a 46 times higher risk if they chewed *paan*–tobacco than those women who had never chewed it (RR = 45.9). The men in the study had a 6-fold greater risk of oral cancer if they were *paan*–tobacco users than if they were never users (risk adjusted for smoking).[29]

The women who chewed *paan*–tobacco in a study in Bangalore had a 25-fold higher risk of oral cancer relative to non-users, while men who chewed *paan*–tobacco had a 3.6-fold RR compared to non-chewers. Men who smoked had a 3.5-fold significantly greater risk than non-users of tobacco.[30]

There are numerous other case–control studies, all of which show high RRs for smokeless tobacco use (tobacco chewing and snuff). These studies also show a trend of increasing risk with increasing frequency of chewing per day, duration of the habit and with associated habits such as alcohol drinking.[31,32] Case–control studies have also shown a significant relationship between smoking and oral cancer in India.[22]

It is clear that the scientific evidence of the role of tobacco use in the causation of oral cancer is overwhelming, with tobacco chewing being of particular concern.

Oesophagus

A case–control study in Delhi reported a 2.6-fold greater risk for developing oesophageal cancer in chewers of tobacco with betel quid, relative to non-chewers, and a nearly 2-fold greater risk for *beedi* smokers (RR = 1.95) in a multivariate model.[33]

In a case–control study in Bangalore, tobacco chewing gave users a nearly 3-fold higher risk (OR = 2.9) than non-chewers (adjusted for smoking), and *beedi* smoking a 4-fold greater risk than non-smokers (adjusted for chewing). The risk of cancer in the lower third of the oesophagus for *paan*–tobacco chewers was 6.6-fold greater than for non-chewers. *Beedi* smoking in males was a significant risk factor for cancer of all the three segments of the oesophagus, but conferred a 7-fold greater risk for the upper third (OR = 7.1) compared to that of non-smokers.[34]

Other studies in Chennai and Thiruvananthapuram have also shown that *paan*–tobacco chewing and smoking are significant risk factors for cancer of the oesophagus. Dose–response relationships for daily frequency as well as duration of the habit were also found.[35,36]

A case–control study on oesophageal cancer in Assam found that men chewing dried tobacco (*chadha*) had a nearly 5-fold greater risk of oral cancer compared to non-users. It also found dose–response relationships similar to that in the other studies. Among chewers of more than 20 years' duration, men had more than a 10-fold higher risk (OR = 10.6) and women a 7-fold higher risk (OR = 7.2) relative to non-chewers.[37]

In summary, evidence based on a variety of case–control studies show that both tobacco chewing and smoking increase the risk of developing oesophageal cancer several-fold.

Larynx

In a population-based case–control study conducted in Mumbai, *beedi* smoking emerged as a significant risk factor for laryngeal cancer, with around 230% greater risk as compared to non-smokers (RR for *beedi* smoking: 2.3).[38] A study in Thiruvananthapuram found that, among smokers of over 20 years' duration, *beedi* smokers had a 7-fold higher risk than non-smokers, and cigarette smokers had a 5-fold higher risk (OR = 7.12 for *beedi*; OR = 5.18 for cigarette).[39]

In summary, two case–control studies found that smoking was a significant risk factor for cancer of the larynx.

Oropharynx

A population-based case–control study in Bhopal found a greater than 7-fold higher risk of oropharyngeal cancer for smoking (OR = 7.3; adjusted for chewing tobacco).[26] In a case–control study in Mumbai, *beedi* smokers had a greater than 5-fold higher risk (OR = 5.6) of cancer of the oropharynx relative to non-smokers.[38]

In a case–control study in Nagpur, tobacco chewers had a nearly 8-fold higher risk (OR = 7.98) and tobacco smokers had an over 2-fold higher risk (OR = 2.25) for oropharyngeal cancer compared to non-users in a multivariate model. Dose–response relationships were also observed for increasing frequency, duration and retention time of tobacco in the mouth.[40]

Stomach

In a hospital-based case–control study on lifestyle risk factors and stomach cancer in Chennai, smokers had a greater than 2-fold increased risk of stomach cancer (OR = 2.7) compared to non-smokers. Significant dose–response relationships were observed with age at which smoking was initiated and with lifetime exposure to smoking. Chewers were not found to have a significant risk of stomach cancer in this study.[41]

Cancer of the cervix

A case–control study on the association of *paan*–tobacco chewing and dietary habits with cervical carcinoma was carried out in Chennai, in which 205 women with invasive cervical cancer were age-matched with 213 women controls. A dose-dependent direct association of *paan*–tobacco chewing with invasive cervical cancer was observed.[42]

A study on 1962 women screened at a rural cancer detection unit in West Bengal found that 54% of the women with the habit of *paan*–tobacco chewing had cervical dysplasia (a precursor of cervical cancer), while only 4.1% of non-chewers had such dysplasia (OR = 28.5).[43]

Other sites

Gallbladder: In a case–control study conducted in Delhi on cancer of the gallbladder among patients with gall stones, smokers had an 11-fold increased risk of developing gallbladder cancer in comparison to non-smokers.[44]

Urinary bladder: In a case–control study conducted in Mumbai, tobacco smoking was found to be a risk factor for cancer of the urinary bladder.[45]

Penis: A case–control study in Chennai found that men who used snuff had a 4-fold greater risk of penile cancer than non-users; those who chewed tobacco had a 4-fold higher risk in comparison to non-chewers; and men who smoked had a 1.7 times higher risk than non-smoking men.[46]

4.2 TOBACCO AND CANCER

KEY MESSAGES

- Case–control studies in India have shown that tobacco chewing in its various forms is directly responsible for cancers of the oral cavity, oespohagus, pharynx, cervix and penis.
- *Beedi* and cigarette smoking cause oral, pharyngeal, oesophageal, laryngeal, lung, stomach, gallbladder, urinary bladder and penile cancers.
- Global data show that cancers in certain other anatomical sites such as the kidney, liver and pancreas have also been associated with the use of tobacco. Myeloid leukaemia has also been associated with the use of tobacco.

4.3

Tobacco and Vascular Diseases

Cardiovascular diseases (CVD), as a group, are the leading cause of death in the world. Tobacco use is a major known risk factor for CVD and leads to a high burden of early death and disability. CVD is also the largest contributor to tobacco-related deaths, in terms of absolute numbers. In many countries, deaths due to CVD considerably outnumber cancer-related deaths. CVD-related deaths, therefore, become the leading form of tobacco-related death in these countries.

Magnitude of disease

Cardiovascular diseases accounted for 16.7 million or 29.2% of the total global deaths in 2002, according to the *World health report 2003*. Around 80% of deaths due to CVD took place in low- and middle-income countries. By 2010, CVD will be the leading cause of death in developing countries.[47] The contribution of developing countries to the global burden of CVD, in terms of disability-adjusted life-years (DALYs) lost, was 2.8 times higher than that in developed countries.[48]

India contributed to 17% of the worldwide CVD mortality in 1990.[48] CVD-related deaths in India are expected to rise from about 3 million in 2000 to 4.8 million in 2020.[49] By 2020, about 42% of the total deaths in India are projected to be due to cardiovascular causes (Table 4.2).[50]

During the period 2000–2030, about 35% of all deaths due to CVD in India are projected to occur in the age group of 35–64 years.[49] Tobacco, as a major cause of premature CVD, becomes especially relevant in this context. There is also increasing evidence that the lower-middle class and urban poor are becoming highly vulnerable to CVD as the epidemic advances in India.[51]

Table 4.2 Deaths due to cardiovascular diseases (CVD), coronary heart disease (CHD) and cerebrovascular disease in 2000 and 2020 in India[50]

Disease	1990 Estimated numbers (%)	2020 Projected numbers (%)
All CVD	2,266,000 (24.2)	4,774,000 (41.8)
CHD	1,175,000 (12.5)	2,584,000 (22.7)
Cerebrovascular disease	448,000 (4.8)	945,000 (8.3)

Figures in parentheses indicate CVD deaths as a percentage of total deaths

The social gradient of tobacco consumption in India, which is characterized by higher consumption patterns among the poor, is also relevant to these social dimensions of CVD.

Tobacco and CVD (constituents and mechanisms)

Tobacco use, especially smoking, is associated with vascular diseases such as chronic heart disease (CHD, heart attack), angina (chest pain), sudden cardiac death (SCD, unheralded sudden death), arrhythmias (electrical disturbances), stroke (brain attack), peripheral artery disease (gangrene of the legs), abdominal aortic aneurysms (ballooning of the blood vessels), renal artery stenosis (decreased blood flow to the kidneys), cor pulmonale (poorly functioning lungs) and erectile sexual dysfunction (male

Box 4.2 Pathogenetic pathways

The major constituents of tobacco smoke which are responsible for the cardiovascular effects are nicotine and carbon monoxide. Other chemicals that cause vascular injury include nitrogen oxides, hydrogen cyanide and tar, with cadmium, zinc and carbon disulphide being minor contributors.[52]

Smoking causes endothelial dysfunction (blood vessels cannot dilate normally), lipid alterations (raised levels of 'bad' fats in the blood) and platelet activation, leading to a prothrombotic state (increased tendency of the blood to clot).[53] Tobacco use also increases the risk and severity of vascular disease by increasing the risk of diabetes, which itself damages the vessels by accelerating atherosclerosis (Fig. 4.1).

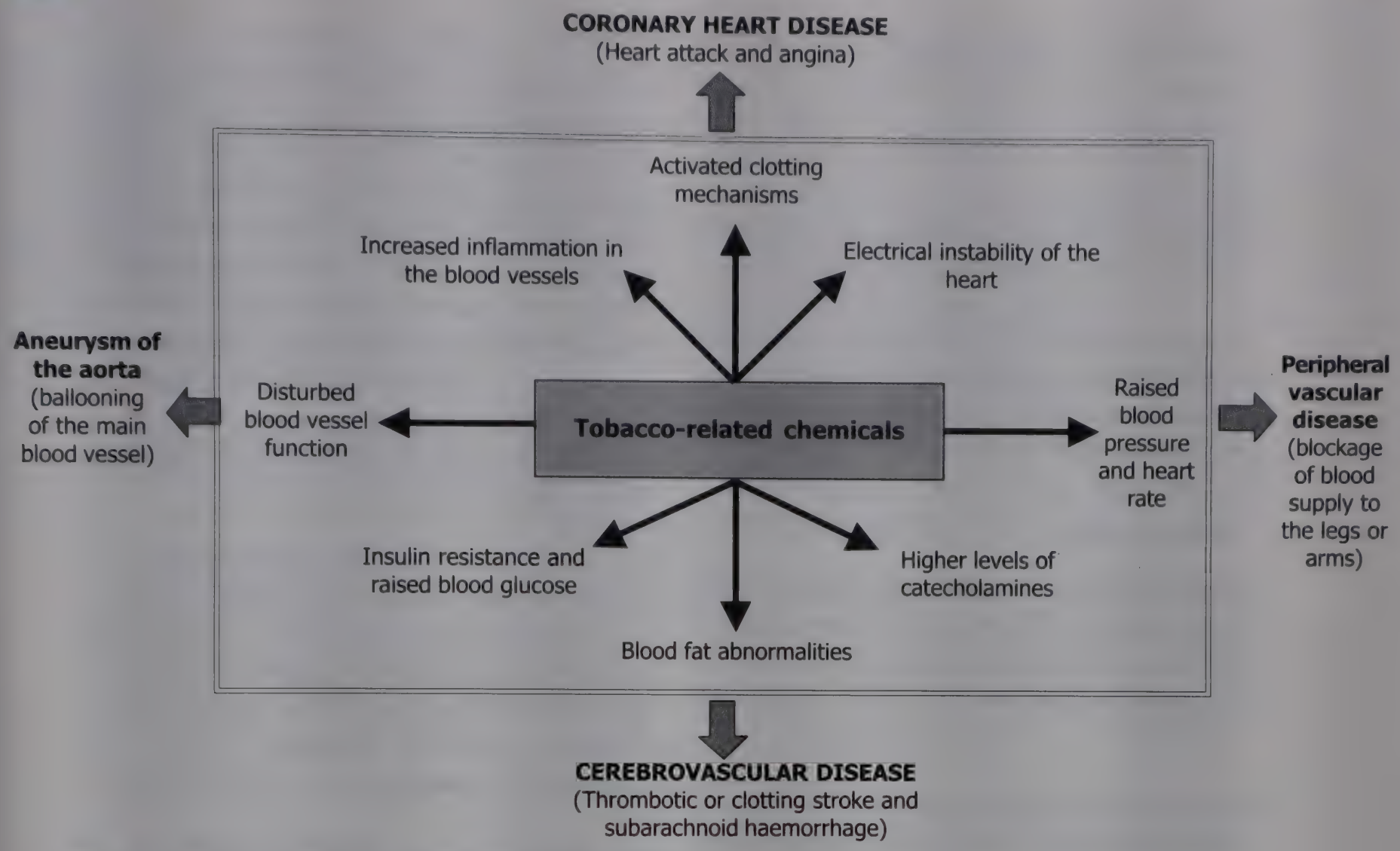


Fig. 4.1 Effect of tobacco on cardiovascular system

impotence). Thus, smoking affects the entire vascular system.

Tobacco and CVD (global evidence)

Active smoking

In a study done in 52 countries, smokers were found to be at 2.87 times increased risk of CHD compared to non-smokers. The evidence was consistent across countries. The study also revealed a dose–response relationship. Individuals smoking more than 40 cigarettes per day had a 9 times increased risk of CHD compared to never-smokers. Smoking even 5 cigarettes per day was associated with an increased risk of CHD. Smoking accounted for about 35.7% of population-attributable risk of CHD worldwide (after adjusting for a range of cardiovascular risk factors).[54]

In the MONICA study, the risk of myocardial infarction (MI) in men and women 35–39 years of age, for those who smoked was five times higher than the risk for those who did not smoke. About 50% of MIs in men and women younger than 50 years of age were attributable to smoking.[55]

There is a dose–response relationship between the quantity of cigarettes smoked and cardiovascular morbidity and mortality.[56] Current cigarette smoking was seen to be strongly associated with the risk of coronary events for both MI and coronary artery disease (CAD).[57] In a study done in the United Kingdom, it was found that at 30–49 years of age, the rates of CHD in male smokers were about five times those in non-smokers, at 50–59 years of age, they were three times those in non-smokers and, at 60–79 years, they were twice as great as in non-smokers. It was also seen that 80% of MIs were due to tobacco in smokers 30–49 years of age, 67% in those 50–59 years and 50% in those 60–79 years.[58]

In women less than 50 years of age, the majority of CHD is attributable to smoking. The risk increases with the number of cigarettes smoked and the duration of smoking.[59] About 48% of all MIs in young and middle-aged Italian women were attributable to cigarette smoking.[60]

In the Nurses' Health Study, the risk of CHD among current smokers was found to be 4.23 times compared with those who had never smoked. The risk of CHD was 1.9 times among those smoking 1–4 cigarettes per day and 5.7 times among those smoking ≥4–5 cigarettes compared to non-smokers.[61]

Of all the coronary risk factors, cigarette smoking is the strongest predictor of SCD. Middle-aged men who smoke have a 10-fold greater risk of SCD and a 3.6-fold increased risk of MI.[62]

Passive smoking

Passive smoking is associated with ischaemic heart disease (IHD), with a 30% excess risk of IHD in non-smokers whose spouses smoke compared with non-smokers whose spouses do not smoke.[63]

Non-smokers exposed to second-hand smoke had a 25% excess risk of CHD compared with non-smokers not exposed to smoke. There was a significant dose–response relationship.[64]

In a prospective study conducted among nurses, it was found that, compared with women not exposed to second-hand smoke, the relative risk of CHD (adjusted for a broad range of cardiovascular risk factors) was 1.58 (95% CI: 0.93–2.68) among those reporting occasional exposure, and 1.91 (95% CI: 1.11–3.28) among women reporting regular exposure to passive smoking at home or work.[60]

A ban on public smoking was associated with a reduced incidence of hospital admissions for acute MI. During the six months in which the law was enforced, the number of admissions fell significantly compared to the same period before and after the law was in effect.[65]

Unlike the case with lung cancer, the risk of acute MI and CHD associated with exposure to tobacco smoke is non-linear at low doses, increasing rapidly with relatively small doses such as those received from second-hand smoke or actively smoking one or two cigarettes a day.[63,66,67]

Stroke

A meta-analysis of 32 studies revealed that the overall risk of stroke increased by 1.5 times, of cerebral infarction (clotting stroke) by 1.9 times and of subarachnoid haemorrhage by 2.9 times in smokers.[68] The number of cigarettes smoked per day was associated positively with the risk of stroke. Compared with women who had never smoked, those who smoked 1–14 cigarettes per day had an age-adjusted relative risk of 2.2 (95% CI: 1.5–3.3), whereas those who smoked 25 or more cigarettes per day had a relative risk of 3.7 (95% CI: 2.7–5.1).[69]

In a study from China, it was seen that a 10% increase in the prevalence of cigarette smoking was associated with a 19% higher mortality from stroke.[70] It was found that a high level of second-hand smoke exposure was independently associated with an increased risk of first ischaemic stroke among never-smoking women.[71]

Thromboangiitis obliterans

Thromboangiitis obliterans (TAO, non-atherosclerotic occlusive disease of the leg arteries) is associated with tobacco smoking. In a study conducted in Bangladesh, those smoking 11–20 *beedis* per day were 7 times more likely and those smoking >20 *beedis* per day were 34 times more likely to have TAO compared to those smoking <10 cigarettes per day. The comparative figures for cigarette smoking were lower (4 times for those smoking 11–20 cigarettes per day and 7 times for those smoking >20 cigarettes per day).[72]

Smokeless tobacco

The limited number of studies available so far have shown conflicting results regarding the relationship between smokeless tobacco use and the risk of fatal MI. While one study found no relationship, smokeless tobacco use was linked with a higher risk of dying from CVD in another prospective study.[73,74]

Tobacco and CVD (Indian evidence)

The relationship between tobacco and CVD has

not been extensively studied in the Indian context. The evidence comes mostly from cross-sectional surveys and case–control studies. Data from cohort studies are still awaited. Cross-sectional studies have several methodological limitations in assessing causation: survival bias, inability to adjust for multiple confounders and misclassification bias arising from relatively non-specific diagnostic instruments used for the diagnosis of CHD in surveys.

In a case–control study conducted in Bangalore, it was found that the most important predictor of acute MI was current smoking of cigarettes or *beedis*. The odds of acute MI was 3.6 in current smokers overall and, in individuals who currently smoked 10 or more cigarettes per day, it was 6.7 compared to never-smokers. It was also found that compared to individuals without risk factors, those with multiple risk factors had a markedly increased risk. For example, smokers with an elevated blood glucose were 10.7 times more likely to have acute MI.[75] In another unpublished case–control study conducted in hospitals in New Delhi and Bangalore, it has been seen that, compared to never-smokers, current cigarette smokers who smoked 22 cigarettes per day had an 18-fold increased risk of CHD. Independent association was also found between *beedi* smoking and CHD risk, with those consuming 25 *beedis* per day having a 10-fold increased risk.[76]

In the Global Interheart Study (in which many Indian centres participated), data for South Asia were analysed separately. Tobacco smoking was found to be associated with CHD; those who smoked were 2.4 times more likely to be at risk for CHD compared to non-smokers. Smoking accounted for about 37% of population attributable risk of CHD in South Asia.[77]

Cross-sectional surveys conducted in urban and rural communities have also attempted to relate smoking with the risk of CHD. A survey in Jaipur observed a 1.33 times increased risk of CHD among male smokers.[78]

In a stroke registry in Hyderabad, 28% of patients with ischaemic stroke had a history of smoking.[79] In another study, smoking was found to be a significant factor for acute iscaemic stroke with an odds ratio of 1.8.[80]

There are as yet no Indian studies that have looked into the effects of second-hand smoke and smokeless tobacco on CVD. Given the extensive levels of exposure to these risk factors in India, it is essential that investigation of their cardiovascular effects is considered a priority for research.

4.3 TOBACCO AND VASCULAR DISEASES

KEY MESSAGES

- Cardiovascular diseases (CVD) are major contributors to death and disability. By 2010, CVD will be the leading cause of death in developing countries.
- Tobacco use is a major known risk factor for CVD. CVD is the leading cause of tobacco-related deaths.
- Tobacco use is associated with earlier myocardial infarction (MI) (heart attacks) and coronary heart disease (CHD)-related deaths at an early age.
- Many of the deaths due to CVD occur at a younger age in India compared to other countries. In India, 42% of the total deaths by 2020 are projected to be due to cardiovascular causes.
- Tobacco use, especially smoking, is associated with vascular diseases. The major constituents of tobacco smoke which are responsible for the cardiovascular effects are nicotine and carbon monoxide.
- Global studies show the association between active and second-hand smoking, and CVD, cerebrovascular stroke, peripheral vascular disease and sudden cardial death (SCD). Presently, there is limited evidence relating smokeless tobacco use and CVD.
- There are a few Indian studies (mostly cross-sectional studies; a few case–control studies; no cohort studies) which have looked into effects of active smoking. These indicate an increased risk for *beedi* as well as cigarette users. Indian studies related to the association of second-hand smoking and CVD are awaited.
- Investigation of the cardiovascular effects of tobacco use should be taken up as a priority for research in India.

4.4

Tobacco and Lung Disease

There is compelling evidence to support a strong relationship between tobacco smoking and various lung diseases. Not only is lung cancer caused by tobacco smoking, so are several other lung diseases such as chronic obstructive pulmonary disease (COPD), bronchial asthma, respiratory infections and some interstitial lung diseases. Some of these problems are also reported in non-smokers who are exposed to second-hand smoke.

Magnitude of disease

Globally

COPD is a leading cause of morbidity and mortality worldwide.[81,82] It is also a major cause of economic burden in both developed and developing countries.[83] It accounted for 5.8% of total deaths in 1990 and is expected to rise to 9.3% of deaths by 2020 (Table 4.3).

Box 4.3 Pathogenetic pathways

The role of inflammation and exposure to toxins in tobacco smoke is central to the pathogenesis of COPD. Tobacco smoke contains thousands of particulates and gaseous irritants and chemicals which cause inflammation and swelling of the respiratory tract. The resultant narrowing of the respiratory tubes causes obstruction to the airflow and trapping of air in the lungs, which swell like a hyperinflated balloon. The innumerable number of chemicals present in the smoke also initiate several enzymatic reactions causing damage to the lung tissue. Both the airway narrowing and lung damage are progressive, especially in the presence of continued smoking.

Within a few years, the irreversible lung damage results in marked respiratory disability, failure and premature death. In chronic bronchitis, an inflammatory airway response caused by chronic exposure to tobacco smoke is the central pathogenetic mechanism. In asthmatics, smoking can lead to amplification of the airway inflammation already present, by recruitment of inflammatory cells, release of pro-inflammatory mediators and enhancement of some cellular functions. In addition to inflammation, smoking is also associated with the increased airway wall remodelling seen in chronic asthma.

India

There are a large number of clinical and epidemiological reports from India on the prevalence of COPD. The disease was first highlighted in the 1960s from analyses of hospital records of patients attending outpatient chest clinics. Chronic bronchitis comprised 2.5% of the total admissions of several hospitals in north

Table 4.3 Deaths due to respiratory diseases in India and the world in 1990 and 2020[81]

	Deaths			
	1990 Estimated numbers (%)		2020 Projected numbers (%)	
	World	India	World	India
Respiratory diseases (total)	2,935,000 (5.8)	267,000 (2.8)	6,366,000 (9.3)	744,000 (6.5)
COPD	2,211,000 (4.4)	140,000 (1.5)	4,726,000 (6.9)	429,000 (3.8)
Asthma	137,000 (0.3)	20,000 (0.2)	326,000 (0.5)	55,000 (0.5)
Other respiratory diseases	587,000 (1.2)	106,000 (1.1)	1,313,000 (1.9)	261,000 (2.3)

Figures in parentheses indicate respiratory deaths as percentages of total deaths

India.[84] COPD accounted for 31% of the clinic attendance in 1952–1954 in Punjab.[85]

A prevalence rate of 4.1% in males was reported in a large prospective study from Tamil Nadu.[86] Epidemiological studies in the 1990s reported prevalence data from cross-sectional community surveys. The overall prevalence of COPD was found to be 5% in male and 2.8% in female subjects in a cross-sectional survey done in Haryana.[87]

In a population survey done among 9090 students, with an age range of 9–20 years, 2.6% of boys were found to have asthma.[88]

Evidence of a tobacco-related association

Global evidence

Tobacco smoking is the most important cause of the development of COPD. This relationship was first established in the 1960s through several population-based epidemiological studies.[89,90] It is universally accepted now that tobacco smoking accounts for over 80%–90% of cases of COPD.[91] Tobacco smoking is now included as an important criterion for the diagnosis of COPD.[92] Evidence favouring a causal relation-ship between tobacco and COPD is based on valid and consistent epidemiological, clinical and laboratory data from multiple studies.[93] The adverse effects of tobacco smoking in those with asthma are also well established.[94]

Indian evidence

Active smoking

There are a large number of clinical and epi-demiological reports from India on the prevalence of COPD and its association with tobacco smoking. The association between active smoking and COPD could be ascertained from a total of 15 studies, which have been reviewed here. Three of the reports included separate urban and rural data. These are summarized in Table 4.4.

There was a large variation in the methodology

Table 4.4 Studies on the prevalence of chronic obstructive pulmonary disease (COPD) and its association with smoking in males[84,85,87,95–106]

Authors	Population studied	Total number	Prevalence of COPD (%)		Ratio of Sm:NSm Males
			M	F	
Viswanathan *et al.* 1964[84]	Patna	15,905	2.1	1.3	7.4
Wig *et al.* 1964[85]	Delhi: Urban	2366	3.1	1.9	8.8
	Delhi: Rural	1401	8.4	2.4	4.7
Jindal 1993[87]	Chandigarh	1473	5.0	2.7	9.6
Sikand *et al.* 1966[95]	Delhi	14,460	3.3	2.6	5.9
Bhattacharya *et al.* 1975[96]	Lucknow: Rural	1140	6.7	4.5	1.7
Joshi *et al.* 1975[97]	Punjab (industrial workers)	473	12.5*		5.3
Viswanathan and Singh 1977[98]	Delhi: Urban	993	8.0	4.3	4.1
	Delhi: Rural		4.7	3.5	9.6
Thiruvengadam *et al.* 1977[99]	Madras (Chennai)	817	1.9	1.2	10.2
Radha *et al.* 1977[100]	Delhi	2098	4.2	2.1	1.8
Malik *et al.*1977[101]	Chandigarh	1154	8.3	5.3	4.8
Nigam *et al.* 1982[102]	Jhansi: Rural	1424	8.1	4.5	1.4
Malik 1986[103]	Chandigarh: Urban	1450	10.8	1.6	11.0
	Chandigarh: Rural	671	20.5	4.9	4.0
Malik and Kashyap 1986[104]	Himachal Pradesh: Rural	446	21.7	19.0	5.5
Behera and Malik 1987[105]	Chandigarh: Schoolteachers	681	3.3	2.1	1.6
Ray *et al.* 1995[106]	Tamil Nadu	9946	4.1	2.6	

Sm: smokers; NSm: non-smokers
*Data for both combined

employed in these surveys. Moreover, the populations surveyed also varied from hospital employees and patients' attendants to clusters of industrial workers or the general population. Smokers, however, were classified as separate groups in most of these studies. The prevalence ratio of smokers to non-smokers among those with COPD was invariably more than 1 in all the surveys reported.

The relationship of COPD with tobacco smoking seems independent of the type of product smoked, i.e. cigarettes, *beedis* or *chutta*, on the basis of some data available on *beedi* smoking and COPD. In a study specifically examining *beedi* smoking, COPD was observed in 34.6% of *beedi* and 45.4% of cigarette smokers versus 3% of non-smokers, the difference in the prevalence of COPD among cigarette and *beedi* smokers was not significant.[107]

The prevalence of asthma and its relationship to smoking is being studied in an ongoing multicentric study conducted by the Indian Council of Medical Research (ICMR). The initial analyses of records of 51,504 individuals from four different centres have shown an increased risk of asthma in smokers. There was a weak association of asthma in adults with exposure to second-hand smoke at home (Table 4.5).

Table 4.5 Odds ratio (OR) of having asthma in relation to smoking history and household exposure to second-hand smoke*

	OR	95% CI
Tobacco smoking		
Ever vs never	2.4	2.1–2.8
Type of smoking		
Cigarette	2.3	1.8–1.8
Beedi	2.3	1.9–2.7
Hookah	4.5	3.1–6.6
Exposure to second-hand smoke		
Any exposure	1.2	1.0–1.4
Time period		
Childhood	1.0	0.8–1.4
Adulthood	1.7	1.0–2.1

*Results from the preliminary analyses of a multicentric study on asthma sponsored by the Indian Council of Medical Research (personal communication)

Passive smoking

Bronchial hyper-responsiveness (BHR) is an important determinant of decline in lung function in normal subjects and those with chronic bronchitis.[108] The risk of BHR in healthy, asymptomatic women exposed to second-hand smoke was significantly high in comparison with non-exposed women.[109]

In another study, children exposed to second-hand smoke were at 1.8 times increased risk of being asthmatic compared to unexposed children (OR = 1.8).[88] A study of asthma in 21,367 Delhi schoolchildren (5–17 years of age), in whom the prevalence of asthma was 11.9%, showed that the presence of smokers in the family was a significant risk factor for children developing asthma (OR = 1.6).[110] In another study too, passive smoking was an important risk factor associated with asthma (OR = 3.33).[111]

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4.4 TOBACCO AND LUNG DISEASE

KEY MESSAGES

- Chronic obstructive pulmonary disease (COPD) is a progressive and disabling lung disease which leads to respiratory crippling and premature death. In India, it affects over 5% of males and 2.7% of females who are over 30 years of age.
- The association of tobacco smoking with respiratory diseases has been established for over 50 years. Till date, it remains the most important causal factor for COPD.
- Tobacco smoking is responsible for over 82% of COPD, which accounts for about 12 million adults suffering from smoking-attributed COPD in India.
- Tobacco smoking also increases bronchial responsiveness, is responsible for an exaggerated lung function decline and predisposition to asthma.
- Exposure of non-smokers, especially children and women, to second-hand smoke from others is an important cause of respiratory infections, worsening of asthma and poor lung functions.

4·5

Smoking and Pulmonary Tuberculosis

Tuberculosis (TB) is one of the world's leading infectious causes of death. It has been reported that currently, one-third of the world's population is infected with the TB bacillus and approximately 2 million individuals die each year of TB, with more than 90% of infections and deaths occurring in low- and middle-income countries. About 80% of all new TB cases are seen in 23 countries; more than half are concentrated in 5 countries (Bangladesh, China, India, Indonesia and Nigeria).[112]

Even in India, pulmonary TB is a highly prevalent disease and a major cause of death. Thus, ascertaining the role of smoking in the development and progression of TB is of paramount importance. Very early studies from the West did point out some association between smoking and TB, but by the time large cohort studies were launched, TB had declined considerably in those countries.

Global evidence

Some studies related to smoking and TB had been conducted in developed countries, where pulmonary TB as a cause of death had already become uncommon. In developing countries, the major increase in smoking is relatively recent, for the full hazards to have materialized.[115–117] Hence, the potential importance of the association between persistent smoking and TB has been underestimated. For example, the disease was not even indexed in two major reports on smoking and health by the US Surgeon-General.[118,119] Some major reports on smoking and health mentioned the association between smoking and TB only to dismiss it.[120–122] In India, as in many other countries, TB still remains a major cause of premature death, both in early adult life and in middle age, particularly among men who smoke.

Box 4.4 Pathogenesis of tuberculosis among smokers

TB occurs predominantly among socially and economically disadvantaged people and in immunocompromised patients. Smoking decreases immune defences and increases susceptibility to pulmonary TB.[113] Cigarette smoking has been found to affect pulmonary function; it can damage the respiratory mucosa, thereby impairing host resistance to infection.[114]

Indian evidence

This section reviews the available case–control and cohort studies of the association between smoking and death from TB in India, case–control studies of smoking in patients recently diagnosed by TB clinics as having active TB, and population surveys that correlate the self-reported prevalence of ever smoking and of ever having TB.

Tamil Nadu studies

Mortality from TB: Urban and rural case–control studies

A case–control study (1995–2002) of tobacco use was conducted among deceased adult men who were 25 years of age and above at the time of death in an urban and a rural area in the south Indian state of Tamil Nadu.[123] Urban cases were from Chennai during 1995–1997 and the rural cases were from the district of Viluppuram during 1997–1998. The controls were living men aged 25 years or above, either married to a woman who had died during the same period as the cases (1995–1997) or a male family member living in the same home as the deceased woman. The study in the urban area included 27,000 cases (2200 of whom had died of TB) and 20,000 controls. The rural study included 16,000 cases (1800 of whom had died of TB) and 15,000 controls. The probable underlying cause of death was assigned by verbal autopsy (VA). The VA procedure used for adult deaths had a sensitivity of 94% to identify cancer in the age group of 25–69 years.[124–126]

In the urban area, among those 25–69 years of age, 78.9% of those who were diagnosed to have died of TB had been smokers, but only 39.2% of the controls were smokers (Table 4.6). The risk among smokers of dying from TB was more than four times that among non-smokers, in both urban and rural areas. Seventy-nine per cent of the 1840 deaths from TB in the urban area involved smokers, and it can be estimated that 61% (1127/1840) of all male TB deaths in this age range would have been avoided on the assumption that the smokers would have had non-smoker TB death rates. Of the 1529 deaths from TB in the rural area, 73% of those who had died of TB had smoked, and 56% (853/1529) of the deaths from TB would have been avoided.[123]

Age-specific comparisons between the men whose deaths were attributed to pulmonary TB and the controls show that in urban Chennai the smoker versus non-smoker risk ratios decreased slightly with age, from 5.1 in early adult life (25–34 years) to 3.4 in old age (75+), but in each age group the excess TB mortality among smokers was substantial and highly significant. Likewise, in rural Viluppuram the excess mortality from TB was substantial and highly significant in all age ranges.[123]

Urban Tamil Nadu (cross-sectional survey) in Chennai: Self-reported prevalence of ever having smoked and ever having had TB

In a cross-sectional survey, among all men and

Table 4.6 Death from pulmonary tuberculosis, by smoking and age: Men in urban and in rural areas of Tamil Nadu, south India[123]

A: Urban (Chennai): 2231 tuberculosis deaths (cases) and 20,162 controls

Age range	TB deaths (cases)		Unmatched controls		Risk ratio, ever/never-smoked*	(95%CI)	Smoking-associated	
	No. smoked	%	No. smoked	%			No.	%
25–34	205	73.7	1787	31.7	5.1	(3.6–7.1)	121	59
35–44	415	80.2	3847	40.7	4.6	(3.6–6.0)	261	63
45–54	517	82.4	5079	41.5	5.2	(4.1–6.6)	344	67
55–64	494	78.9	4171	39.8	4.4	(3.5–5.5)	301	61
65–69	209	72.2	1604	36.3	3.4	(2.4–4.8)	107	51
70–74	177	74.0	1570	37.8	4.1	(2.9–5.9)	99	56
75+	214	64.0	2104	30.8	3.4	(2.5–4.6)	96	45
Subtotal: 25–69	1840	78.9	16,488	39.2	4.5	(4.0–5.0)	1127	61
All medical causes	16,076	60.0	16,488	39.2	2.1	(2.0–2.2)	5021	31

B: Rural (Viluppuram): 1841 tuberculosis deaths (cases) and 15,128 controls

Age range	TB deaths (cases)		Unmatched controls		Risk ratio, ever/never-smoked*	(95%CI)	Smoking-associated	
	No. smoked	%	No. smoked	%			No.	%
25–34	119	64.7	2738	43.1	2.4	(1.6–3.5)	44	37
35–44	291	79.7	4068	51.8	4.1	(3.1–5.6)	176	61
45–44	471	75.8	3510	47.8	4.0	(3.2–5.1)	268	57
55–64	461	74.4	2183	39.4	5.5	(4.3–6.9)	280	61
65–69	167	59.9	864	34.3	3.2	(2.3–4.6)	77	41
70–74	139	51.1	794	36.1	2.2	(1.5–3.3)	39	28
75+	173	49.1	971	29.4	2.5	(1.8–3.5)	51	29
Subtotal: 25–69	1529	73.3	13,363	44.0	4.2	(4.7–4.8)	853	56
All medical causes	10,121	52.0	13,363	44.0	1.6	(1.5–1.7)	2057	20

*Standardized for age, educational level and tobacco chewing

CI: confidence interval

Table 4.7 Prevalence of ever having pulmonary tuberculosis by smoking and age: Survey of 250,000 men in urban Chennai, Tamil Nadu, South India[123]

Age range (years)	Ever-smoker		Never-smoker		TB prevalence ratio, ever/never-smoked*	
	Ever TB/total	%	Ever TB/total	%		(95% CI)
35–44	233/42,813	0.5	134/71,273	0.2	2.4	(1.9–3.0)
45–54	254/27,293	0.9	123/42,196	0.3	2.7	(2.1–3.3)
55–64	214/15,159	1.4	73/24,162	0.3	3.9	(3.0–5.1)
65–69	68/4171	1.6	25/8034	0.3	4.6	(2.8–7.3)
Subtotal:						
35–69	769/89,436	0.86	355/145,665	0.2	2.9	(2.6–3.3)
70+	63/4448	1.4	53/11,468	0.5	2.8	(1.9–4.0)

*Standardized for age, educational level and tobacco chewing. The lower age limit in this survey was 35 years.

women aged 35 years or above in Chennai during 1998–2001, which included 251,000 men and 225,000 women, 67% of the men with a history of TB and 37% of other men (age ≥35 years) in the general population were found to be smokers. In the age range of 35–69 years, the standardized self-reported TB prevalence ratio was 2.9. This self-reported prevalence of TB (both in middle and old age) was 3 times higher among ever-smokers compared to never-smokers. This provides strong evidence that smoking substantially increases the probability of ever having clinical TB. Among ever-smokers aged 35–69 years, the TB prevalence ratio was positively related to daily smoking, both of cigarettes and, particularly, of *beedis* (Table 4.7).[123,126]

Case–control study in rural Tamil Nadu: Prevalence of ever-smoking among patients with smear/culture-positive TB

A population survey was carried out to identify TB cases among 60,000 subjects 10 years of age and above in 30 villages in the Tiruvallur district of the state of Tamil Nadu, south India, during 1993–1996.[127] The results of the study are provided in Table 4.8. Seventy-five per cent of cases and 55% of controls were smokers. The age-adjusted relative risk of developing TB was over 2-fold among ever-smokers compared to never-smokers.[127]

Table 4.8 Prevalence of confirmed pulmonary tuberculosis (TB) by smoking in men (cases vs controls) 20–50 years of age in rural Tamil Nadu[127]

Smoking status	Cases (*n*=85)	Controls (*n*=459)	Age-adjusted TB prevalence ratio, ever/never-smoked (95% CI)
Never-smokers	21	206	1.0
Ever-smokers	64	253	2.2 (1.3–3.9)

Preliminary results of two ongoing studies in Kerela

Population survey in an urban area: Self-reported prevalence of ever having smoked and ever having had TB

An urban population survey of 106,637 males aged 25 years and above in the city of Thiruvananthapuram, Kerala showed that the percentage of ever-smokers among those with a self-reported history of TB was 74%, as against 49% in other adults. A history of TB was reported by 1.5% of ever-smokers and 0.5% of never-smokers (Table 4.9), yielding a risk ratio (RR) of 3.0.[128]

Case–control study in a rural area: Incidence of TB

A case–control study is being conducted in four districts of Kerala. Over 4 months, 808 confirmed male TB cases under treatment by the local TB

Table 4.9 Prevalence of self-reported pulmonary tuberculosis in men aged 25 years and above in Kerala, south India[128]

Smoking status	Tuberculosis		Risk of tuberculosis RR (95% CI)
	Yes	No	
Never-smokers	267	51,495	1.0
Ever-smokers	748	55,142	3.0 (2.6–3.5)

control programme and 878 population controls were recruited. About 86% of cases and 68% of controls were smokers, yielding a risk ratio of 2.9 for developing TB among smokers (95% CI: 2.3–3.7) (Table 4.10).[128]

Table 4.10 Incidence of confirmed pulmonary tuberculosis among men in Kerala, south India[128]

Smoking status	Cases	Controls	Risk ratio (95% CI)
Never-smokers	115	280	1.0
Ever-smokers	693	598	2.9 (2.3–3.7)

Mumbai, Maharashtra study

Prospective study of 100,000 adults (age 35+ years) in an urban area: Mortality from TB

A baseline survey of 99,598 individuals aged 35 years and above in Mumbai (population: 3.4 million) was conducted between 1991 and 1994. The study showed that the relative risk for all-cause mortality for ever-smokers compared to never-smokers was 1.6 in men and 1.3 in women. Comparing ever-smokers to never-smokers, the age-adjusted relative risk of death due to TB was 2.6, but this decreased to 2.1 on standardizing for education (Table 4.11). A higher relative risk was seen for *beedi* smokers compared to cigarette smokers.[129]

Chandigarh study

Case–control study in urban Chandigarh: Incidence of active TB

In a case–control study in Chandigarh, the cases were 200 patients (males and females) with active pulmonary TB, as confirmed by either positive sputum smears or strong clinical and radiographic evidence with documented response to anti-tubercular drugs. They were matched, by age and sex, with 200 healthy individuals (healthy controls) and with 200 patients (patient controls) who attended the chest clinic, excluding those with chronic obstructive pulmonary disease and lung cancer.[130] Thirty-five per cent of cases, 11% of controls with other respiratory disorders and 12.5% of healthy controls were smokers. Comparing the cases with the healthy controls, the ever-smoker versus never-smoker odds ratio standardized for age, sex, socioeconomic status and history of exposure to TB was 4.4.[130]

Table 4.11 Death from pulmonary tuberculosis by smoking: Prospective study of men aged 35 years and above, in Mumbai, Maharashtra[129]

Smoking status	TB deaths (cases)	Adjusted relative risk	
		By age	By education
Never-users	30	1.0	1.0
Ever-smokers	86	2.6	2.1

National Family Health Survey

The National Family Health Survey (NFHS-2) was conducted among a representative sample of 492,197 persons in 92,486 households in India. The survey results indicated that the overall prevalence of TB in India was 0.6% in rural areas and 0.4% in urban areas. The prevalence was 0.62% among males and 0.46% among females, and increased with age. It was estimated that about 2 million people in India develop TB each year.[131,132]

The studies done in India show a 2- to 4-fold TB prevalence/incidence ratio among males based on the age range analysed in the study, and the smoking-associated proportion was 41%–56%. In 2000, the prevalence of all reported cases of TB among males aged 15 years and above in 1998–1999 was 552 per 100,000 population.[133] The burden of TB in India among those aged 15–59 years was 4.0 million (Table 4.12). The death of about half of all TB cases among males would have been avoided if the smokers had had non-smoker TB death rates. The death of about half of all TB cases in 2000—about one million—would have been avoided if the smokers had had non-smoker TB death rates.

Despite some limitations in a few of the studies

Table 4.12 Burden of tuberculosis (TB) in India in 2000[131,133]

Age range (years)	Interview-reported history of TB (%)	Population in 2000 (millions)	Estimated number with a history of TB (millions)
<15	0.15	338	0.5
15–59	0.68	594	4.0
60+	1.37	77	1.1

discussed here, a strong, consistent association does emerge in them. TB is known to be strongly associated with socioeconomic status and other factors such as alcohol use. Thus, confounding from some unknown risk factors remains a possibility but, given the magnitude of the risk, it is highly unlikely to nullify the observed association with smoking.

The studies done in Tamil Nadu estimated that in India, at the death rates of the year 2000, there would be about 700,000 deaths a year due to tobacco smoking, of which about 200,000 would involve pulmonary TB. Half of these tobacco-attributed TB deaths are of men still in their thirties, forties and early fifties.[123] The percentage of smokers among those who died of TB in the Tamil Nadu and Mumbai studies was much higher than the percentage of smokers in the general population. After standardization for age, educational level and tobacco chewing, the results in both the urban and rural areas in Tamil Nadu indicate a mortality ratio (ever-smoker versus never-smoker) of about 4. The results of the Mumbai study indicate an age-standardized mortality ratio of about 3. The magnitude of these RRs are too high to be explained as a result arising only due to confounding.

In general population surveys and case–control studies, the proportion of adults who reported a current or previous history of TB (self-reported TB) and the proportion with confirmed TB (by laboratory tests) are substantially higher among ever-smokers than among never-smokers. This indicates that smoking acts more to increase the incidence of clinical disease than to increase the probability that clinical disease will lead to death from TB. This is because an increased case fatality rate among smokers would selectively remove smokers from the population of patients with TB, and would therefore tend to reduce rather than increase the proportion of smokers in live patients who are detected to have the disease in a survey or a case–control study. Further evidence of causality is that the heavier the exposure (either to cigarettes or *beedis*), the greater the prevalence of TB among smokers. Thus, smoking seems to be an important cause of death from TB.

4.5 SMOKING AND PULMONARY TUBERCULOSIS

KEY MESSAGES

- TB is a major cause of premature death in India, both in early adult life and in middle age, particularly among men who smoke.
- The prevalence of TB is about three times as great among ever-smokers as among never-smokers.
- The heavier the smoking, either cigarettes or *beedis*, the greater the prevalence of TB among smokers.
- Mortality from TB is three to four times higher in ever-smokers than in never-smokers.
- Smoking contributes to half the male deaths from TB in India and a quarter of all male deaths in middle age (25–69 years).
- In India, there are an estimated 200,000 deaths per year due to smoking in those with pulmonary TB, out of 700,000 tobacco smoking-related deaths (base year 2000). Half of these tobacco-attributed TB deaths are of men still in their thirties, forties and early fifties.

4.6

Tobacco Use and Reproductive Health Outcomes

This section presents a focused overview of global and Indian research on adverse reproductive outcomes associated with tobacco use during pregnancy.

Smoking by mothers has been identified as the greatest single preventable cause of infant morbidity and mortality in the West and may have long term effects on surviving children. In addition, several complications in the mother have been associated with maternal cigarette smoking.[134]

Mounting evidence from India and elsewhere indicates that smoking men have a lower sperm count than non-smokers; the sperm quality of their semen is reduced and contains a higher proportion of malformed sperm, which also have reduced motility.[135,136] Smoking also increases the risk of impotence by around 50% for men in their thirties and forties. Thus, smoking also harms the sexual health of men.[137]

Box 4.5 Pathogenetic pathways

Of more than 2000 compounds in tobacco, the most important for the pregnant woman and foetus appear to be nicotine, carbon monoxide, heavy metals and polycyclic aromatic hydrocarbons (PAHs). Carbon monoxide, which is generated during cigarette smoking, can cause reduced oxygen delivery to the foetal cells. Nicotine leads to decreased blood supply to the uterus and placenta. Nicotine has also been found to have a significant effect on the functions of the brain and on organ development during the sensitive period of development of the foetus. PAHs are known to be capable of inducing foetal toxaemia, retard foetal growth and development,[138] and disrupt the endocrine system.

Global evidence of tobacco-related association

The US Surgeon General's Report (2001) summarizes the following evidence on women and smoking: [139]

1. Smoking harms the sexual and reproductive health of both men and women.
2. Its damaging effects are seen throughout reproductive life–from puberty through young adulthood and into middle age.
3. Smoking can compromise the capacity to have a family by decreasing fertility, and parental smoking can have long term and serious consequences for child health.
4. The effects of maternal smoking during pregnancy encompass a wide spectrum—decreased foetal growth, spontaneous abortions, foetal deaths, pregnancy complications including those that predispose to preterm delivery, and long term effects on the surviving children.
5. Cigarette smoking by the mother during pregnancy has long been considered an important independent risk factor for decreased infant birth weight. This was first reported in 1957.[140] Since then, decrease in birth weight in cigarette-smoking mothers has been confirmed in more than half a million births; this overwhelming evidence confirms that cigarette smoking causes decreased growth in the infant.[141]
6. Babies of mothers who smoke during pregnancy are on average 200 g lighter than babies born to comparable non-smoking mothers. Smokers' babies are smaller than corresponding non-smokers' babies in all dimensions measured, including length, head circumference, chest circumference and shoulder circumference.
7. Foetal death rates are 35% higher among pregnant women who smoke cigarettes than among non-smokers.
8. Women smokers are less likely to breastfeed their infants than are women non-smokers.
9. If a woman gives up smoking by the fourth month of pregnancy, her risk of delivering a

low birth-weight baby is similar to that of a non-smoker.

10. Women who quit smoking before or during pregnancy reduce the risk for other adverse reproductive outcomes, including conception delay, infertility, premature rupture of membranes, and preterm delivery.

Reports on adverse reproductive outcomes associated with forms of smoking other than cigarettes are few. In one study, among hubble-bubble (*hookah*) smokers in Beirut, Lebanon, the risk of low birth weight was nearly two-fold (1.89) compared to non-smokers and, on an average, babies of smokers weighed 100 g less at birth.[142] *Beedi* smoking by the mother in Bangladesh was associated with a more than two-fold increase in perinatal mortality, from 122 to 270 per 1000 live-borns.[143]

Indian evidence of tobacco-related association

The effects of *beedi*, cigarette and other forms of smoking prevalent among Indian women on reproductive outcomes are less researched in comparison to cigarette smoking in western pregnant women, which has been extensively researched.

Maternal exposure to second-hand smoke decreases the birth weight of the infant and increases the proportion of premature deliveries. The average reduction in infant birth weight due to mothers being exposed to second-hand smoke in comparison to non-exposed mothers was 63 g in a study from Vellore, Tamil Nadu[144] and 138 g in a study from Chandigarh.[145] Any birth weight differences that could arise between the women exposed to second-hand smoke and the unexposed group due to differences in maternal age, height, parity, social class, months at birth, anaemia and sex of the infant were taken into account in these studies for calculating this smoking-attributable decrease in birth weight. The babies of exposed women were also more likely to be delivered early in both these studies.

Women who use smokeless tobacco (ST) during pregnancy are more likely to have a low birth-weight baby (<2500 g at birth). The increased risk for this ranges from 40%[146] to about 90%.[147] In a case–control study carried out in Mumbai, differences between ST users and non-users on other aspects important to infant birth weight such as maternal body weight, socioeconomic status, and medical factors such as care during pregnancy, presence of anaemia and months at birth of the baby did not significantly alter the higher risk of low birth weight in children of tobacco users.[146]

The percentage of tobacco-user mothers was higher than non-user mothers in every category of birth weight below 2500 g. Eighty per cent of women ST users in this study used *mishri*, a burnt tobacco toothpowder.[146] In another study, the average birth weight was reduced by about 100–200 g in tobacco chewers, in all classes of maternal weight, social class and gestational age.[148] In another study, the average birth weight was decreased by 395 g in tobacco chewers.[149]

When mothers used ST less than five times a day, the risk of having a low birth weight baby was 50% higher, whereas in mothers who used ST five or more times daily, the risk was over 100% higher than in non-users.[146] The average decrease in birth weight increased with increasing ST use.[146,149]

A statistically significant reduction in birth length of 0.518 cm in tobacco chewers has been reported.[149] Babies born to ST-user mothers were more often growth retarded.[150]

It is well known that premature delivery (delivery before the ninth month) is associated with increased risk for foetal, neonatal and perinatal mortality. Preterm deliveries are more common in ST-user mothers; a greater proportion of chewing mothers, in each social class, were delivered at 36 weeks or earlier, and markedly fewer at 39 weeks or later in comparison to non-user mothers.[148] A 40% increased risk was observed for delivery before

the ninth month, after taking into account the differences in age, education, socioeconomic status, anaemia, body weight, and antenatal care of women tobacco users and non-users. The percentage of preterm deliveries increased with increasing use of ST. Such very early preterm births in settings where the neonatal care infrastructure is less developed can imply higher death rates during delivery or in the first month of life.[146] A research study showed that women who chewed tobacco were 200% more likely to deliver a dead foetus (stillbirth).[148] Death of the foetus during pregnancy, delivery or within 7 days of delivery was greater by 57% in tobacco-user mothers in another study.[151]

4.6 TOBACCO USE AND REPRODUCTIVE HEALTH OUTCOMES

KEY MESSAGES

- Tobacco use has an adverse effect on the sexual and reproductive health of both men and women.
- Men who smoke have a lower sperm count and poorer sperm quality than non-smokers.
- The effects of maternal tobacco use (smoked and smokeless) during pregnancy include decreased foetal growth, spontaneous abortions, foetal deaths, pregnancy complications including those that predispose to preterm delivery, and long term effects on the surviving children.
- Exposure to second-hand smoke during pregnancy has been associated with lower infant birth weight.
- Stopping tobacco use before the fourth month of pregnancy is likely to ameliorate or eliminate many of the harmful effects.

4.7

Tobacco-related Oral Mucosal Lesions and Dental Diseases

In contrast to its effects on other parts of the body, the health impacts of tobacco on the mouth such as oral precancerous lesions/conditions and periodontal diseases receive relatively little attention and are not widely known among the general public.[152] Tobacco in any form, either smoked or smokeless, can cause a wide spectrum of oral mucosal alterations or lesions. The type and location of the alteration/lesion varies with the type of tobacco used, the way it is used, and the frequency and duration of use. These lesions are classified as (i) premalignant (precancerous) lesions, (ii) premalignant conditions, and (iii) other tobacco-related lesions. A premalignant lesion is a localized tissue alteration, while a premalignant condition is more generalized and widespread with significant systemic involvement.[153] Precancerous lesions include leucoplakia, erythroplakia and palatal changes among reverse smokers, and precancerous conditions include oral submucous fibrosis and oral lichen planus. The pathogenesis of premalignant lesions has been discussed in Box 4.6. Evidence shows that premalignant lesions are direct precursors of invasive lesions. The most common oral precancerous lesion is leucoplakia, which manifests as a white plaque.[154]

Box 4.6 Pathogenetic pathways[155]

Oral and pharyngeal tissues come into direct contact with carcinogens present in smokeless tobacco products and tobacco smoke. In addition, tobacco-specific nitrosamines (TSNAs) can be formed in the mouth through the process of nitrosation.

Global evidence

Globally, several studies have confirmed the association between tobacco and oral precancerous lesions such as leucoplakia and erythroplakia.[152–161] Several cross-sectional and longitudinal studies have shown that tobacco smokers and chewers experience an increased prevalence and worsening of periodontal diseases with subsequent tooth loss.[152] In South Asia too, tobacco use is found to be associated with periodontal disease.[162–163]

Indian evidence

In India, a vast majority of oral cancers are preceded by precancerous lesions and conditions caused by the use of tobacco in some form. These can be more easily seen because of their peculiar oral location, making oral cancers particularly amenable to prevention.[153] This section profiles several oral lesions, for which an association with tobacco has been observed.

Premalignant lesions

Leucoplakia

Leucoplakia is the most common precancerous lesion associated with smoking and/or chewing tobacco. Tobacco smoking and chewing are the most important aetiological factors for leucoplakia. Globally, it occurs 6 times more frequently in smokers than in non-smokers.[164] In India, leucoplakia has only rarely been reported among individuals who do not use tobacco in some form. The prevalence of leucoplakia in India varies from 0.2% to 5.2%.[165–168] Leucoplakia may be persistent, regress spontaneously, recur or progress to cancer. Regression occurs more significantly in lesions associated with the chewing of tobacco or betel quid than in those associated with smoking.[169,170] Worldwide, 3.6% of leucoplakia shows malignant transformation.[171] Malignant transformation rates in leucoplakia varied from 0.13% to 10% in various Indian studies.[169,170,172,173]

Among the subclinical types, at least 20% and up to 46% of nodular leucoplakia progress to cancer as compared to 0.5%–1.7% of homogeneous leucoplakia, and 1% or less of ulcerated leucoplakia, depending on the follow up period.[169,170,174] It has been reported that on biopsy, nodular leucoplakia is more likely than the other types to show dysplasia or carcinoma, and that lesions with significant histological alteration carry a greater risk than those with a normal histology.[174]

Erythroplakia

Erythroplakia has been associated with tobacco smoking and alcohol use. A prevalence rate of 0.09% is reported in the USA and 0.02% in Indian villagers.[175] Erythroplakia represents the most severe oral premalignant lesion and carries a much greater risk of cancer than leucoplakia.[175,176]

Palatal changes among reverse smokers

Reverse smoking has detrimental effects on the palatal mucosa, which is clinically characterized by the presence of palatal keratosis, excrescence, patches, red areas, ulceration and pigmentation.[169] One component may change into another over time, reflecting a single pathogenetic mechanism. In a 6-year follow up study of about 10,000 individuals in Srikakulam, in the state of Andhra Pradesh, the incidence rates of palatal changes observed were 24.9 per 1000 men and 39.6 per 1000 women per year; almost all the lesions occurred among smokers.[169]

Palatal changes among reverse smokers exhibit a varied clinical course. In 6 years of follow-up in Srikakulam district, 0.2% of palatal changes progressed to oral cancer, 74.5% remained stationary, 14.3% regressed completely and in 11% the clinical behaviour was not clear.[169] In Visakhapatnam district, where reverse *chutta* smoking is widely prevalent, the frequency of palatal cancer in the hospital was reportedly high—about 38%–48% of all oral cancers.[177]

Premalignant conditions

Oral submucous fibrosis

Oral submucous fibrosis (OSMF or OSF) is a premalignant condition characterized by slowly progressive chronic fibrotic disease of the oral cavity and oropharynx, in which the oral mucosa loses its elasticity and develops fibrous bands, which ultimately lead to difficulty in opening the mouth. Several aetiological factors are suggested but it is now accepted that OSMF is clearly caused by areca nut chewing.[178]

From an uncommon disease found mainly among old persons in India, OSMF is emerging as a new epidemic mainly among the youth (persons below 35 years), as shown by the increase in prevalence from 0.16 to 3.2 in Bhavnagar, Gujarat from the late 1960s to the late 1990s (Table 4.13).[166,178] This dramatic increase in OSMF among young people in India has been attributed to *gutka* and *paan masala* chewing.[178,179] The prevalence of OSMF in various Indian studies ranges from 0.03% to 3.2% (Table 4.13).[165–168,180–181]

OSMF is a high-risk precancerous condition. From 4.5% to 7.6% of OSMF lesions progress to become oral cancer.[182,183] The relative risk of malignant transformation among individuals with OSMF compared to individuals who do not have any oral precancerous condition was 397.3 (stratified for tobacco use).[174] The increased malignant potential is due to generalized epithelial atrophy. In India, a higher occurrence of leucoplakia and carcinoma is reported in patients with OSMF. It is believed to be an important factor responsible for the increasing incidence of oral cancer in lower age groups (below 35 years).[178,184]

Oral lichen planus

Oral lichen planus (OLP) is a chronic mucocutaneous condition categorized as precancerous. The aetiology of OLP remains unclear; however, tobacco practices are reported to be

Table 4.13 Prevalence of oral submucous fibrosis (OSMF) in different areas

Place	Persons examined (*n*)	Persons with OSMF (*n*)	Prevalence (%)	Tobacco users (*n*)	Non-users of tobacco (*n*)	Type of population
Lucknow[165]	10,000	51	0.5	49	2	Urban
Bangalore[180]	10,000	18	0.18	–	–	Urban
Trivandrum[181]	5000	61	1.2	–	–	Urban
Ernakulam[166]	10,287	36	0.4	–	–	Rural
Srikakulam[166]	10,169	4	0.04	–	–	Rural
Bhavnagar[166]	10,071	16	0.16	–	16	Rural
Bhavnagar[178]	5018	164	3.2	160	–	Rural
Agra[167]	7286	44	0.6	44	–	Rural
Pune[168]	101,761	33	0.03	30	3	Rural

an aetiological factor.[185] Malignant transformation was reported in 0.3% of cases in Ernakulam district, Kerala.[169] In India, a longitudinal study demonstrated an association between tobacco-chewing practices and OLP.[186]

In India, the prevalence of OLP among 35,000 dental patients in four urban centres ranged from 0.02% to 0.4%.[165,181,187] In a house-to-house study of random samples of 7639 Indian villagers, the prevalence varied from 0.1% to 1.5%.[185] The incidence rate of OLP in Ernakulam, Kerala was 2.1 per 1000 men and 2.5 per 1000 women per year among 34,039 persons, whereas in Bhavnagar, Gujarat, it was 0.1 per 1000 men and 0.03 per 1000 women per year in 32,841 persons.[167]

Other tobacco-related oral mucosal lesions

Other common oral mucosal lesions reported from India include smokers' palate, leucoedema, tobacco–lime users' lesion, OLP-like lesion, central papillary atrophy of the tongue, palatal erythema, palatal erythema with papillary hyperplasia and periodontal disease. The epidemiology of these lesions has been extensively studied and reported. The common thread among all of them is a strong association with tobacco use in any form. These lesions have not shown any significant excess malignant potential.[162,165,169,188–190]

Effect of interventions on tobacco-related oral mucosal lesions

In India, the effects of primary intervention on tobacco-related oral mucosal lesions were studied in the rural populations of three districts: Ernakulam (Kerala), Bhavnagar (Gujarat) and Srikakulam (Andhra Pradesh).[191,192] Table 4.14 shows the relationship between the regression rate of leucoplakia and changes in tobacco use in Ernakulam and Bhavnagar one year after the intervention. The regression rate

Table 4.14 Regression of leucoplakia according to change in tobacco use at the first follow up examination (*n*=11,388 subjects), one year after intervention in Ernakulam and Bhavnagar districts[193]

Level of tobacco use	No. of leucoplakia lesions	No. of regressed leucoplakia lesions	Regression rate (%)
Ernakulam			
Unchanged/increased	263	3	1.1
Reduced/stopped	76	4	5.3*
Total	339	7	2.3
Bhavnagar			
Unchanged/increased	520	67	12.9
Reduced/stopped	9	5	55.6†
Total	529	72	13.6

*p<0.05; †p<0.01

Table 4.15 Comparison of 5-year age-adjusted incidence rate for leucoplakia in the intervention and control cohort in Ernakulam district, Kerala[191]

	Intervention cohort		Control cohort		Rate ratio
	Leucoplakia (*n*)	Incidence per 1000	Leucoplakia (*n*)	Incidence per 1000	
Smoking					
Men	15	8.0	34	24.5	0.33
Chewing					
Men	15	22.6	34	44.6	0.51
Women	21	6.2	67	33.5	0.19
Mixed					
Men	36	18.1	66	90.9	0.20
Women	1	9.4	2	49.0	0.19
Total					
Men	87	11.4	134	47.8	0.24
Women	22	5.8	69	33.0	0.18

of leucoplakia among those discontinuing or reducing their level of tobacco use was more than four times higher than among those who continued their practices.[193] In Srikakulam, a regression rate of palatal changes of 2.8%, 10.1% and 20.7% was observed among subjects who did not change, reduced and quit tobacco practices, respectively, after one year. At the end of a 5-year intervention, in Ernakulam district, the age-adjusted incidence rate of leucoplakia per 1000 men was 47.8 in the control cohort versus 11.4 in the intervention cohort and, among women, it was 33 versus 5.8 per 1000 (Table 4.15).[191] In Srikakulam, the 5-year age-adjusted incidence rate for palatal changes per 1000 in the intervention cohort was 59.8 among men and 289.5 among women, while in the control cohort it was 260.8 among men and 489.5 among women.[191] The intervention continued for 10 years and there was strong evidence for a decreased incidence of leucoplakia in Ernakulam and of palatal changes in Srikakulam, which represented a potential decrease in the risk of oral cancer.[194]

4.7 TOBACCO-RELATED ORAL MUCOSAL LESIONS AND DENTAL DISEASES

KEY MESSAGES

- Tobacco use in any form has marked effects upon the soft tissues of the oral cavity.
- Tobacco use is associated with oral precancerous lesions such as leucoplakia and erythroplakia, and other oral mucosal lesions.
- Leucoplakia is the most common precancerous lesion associated with smoking and/or chewing tobacco.
- Oral submucous fibrosis (OSMF) is emerging as a new epidemic, especially among the youth. The dramatic increase in OSMF among young people in India has been attributed to chewing *gutka* and *paan masala*.
- Primary intervention has been found to be useful in reducing tobacco use and consequently the incidence of precancerous lesions.

4.8

Green Tobacco Sickness Among Tobacco Harvesters

Tobacco growing in the field or in an uncured state is called 'green tobacco'. This is toxic when in prolonged direct contact with the skin. Workers engaged in tobacco cultivation suffer from an occupational illness is known as 'green tobacco sickness' (GTS). The illness was first reported among tobacco workers in Florida, in 1970, as cropper sickness.[195] Later, it was found to be caused by the absorption of nicotine from wet tobacco plants and reported as GTS.[196] Since the sickness is self-limiting, treatment is not always necessary.[197] The amount of nicotine present in tobacco leaves is influenced by genetics, fertilization practices, the weather, cultivation and harvesting techniques, and ranges from 0.6% to 9%.[198]

Tobacco cultivation is seasonal, and hazardous cultivation practices last for 2–3 months during the harvesting season. Tobacco cultivation involves different processes such as sowing, transplanting of seedlings, topping of flowering buds, disbudding of axillary buds, harvesting of plants and leaves, separation of leaves, stringing and tying of leaves before they are kept in a barn for curing, grading, etc. Figure 4.2 shows the agricultural practices followed during tobacco cultivation, which lead to the smearing of thick, gummy plant sap on the hands of workers and other parts of their bodies that come in contact with tobacco leaves. This leads to the absorption of nicotine through the dermal route. Workers engaged in various processes get cuts and abrasions on their palms and the skin around their nails gets peeled off, facilitating nicotine absorption.[199]



Fig. 4.2 Hazardous process of tobacco cultivation
(a) Disbudding of axillary buds, (b) topping of flowering buds, (c) harvesting of tobacco plants, and (d and e) hands of the workers

Green tobacco sickness is an acute form of nicotine toxicity and usually occurs several hours after continuous exposure to green tobacco leaves. The illness lasts for 12–24 hours and is characterized by headache, nausea/vomiting, giddiness, loss of appetite, fatigue, weakness and, sometimes, fluctuations in the blood pressure or heart rate.[199] Although GTS is not reported to be associated with mortality or long-term morbidity, it causes considerable discomfort. The loss of wages depends upon the severity of 'green' symptoms and co-morbid conditions. In the mild form of the disease, workers continue to work and do not lose their wages. However, there are usually two to three occasions when they are unable to work and thus have to lose wages of 2–3 days per season.

Global evidence

Studies from several countries have confirmed the entity of GTS, which occurs when tobacco workers hand-harvest, cut, or load tobacco plants, usually in the early morning or after rainfall when tobacco plants are covered with moisture.[200,201]

Indian evidence

India is the third country to have reported GTS among tobacco harvesters.[202] Cross-sectional studies were carried out to assess the prevalence of GTS among tobacco harvesters in four villages of Gujarat, where tobacco is cultivated mainly for making *beedis*, chewing tobacco and snuff, as well as in a research farm of the Central Tobacco Research Institute (CTRI) at Andhra Pradesh, where mainly cigarette tobacco is grown. [203–205] In the two areas of Gujarat, 66%–70% of the tobacco workers studied (n=975) were men, while in Rajahmundry (Andhra Pradesh) 69% of the tobacco workers studied (n=289) were women (Table 4.16).

Among men, 68%–75% of tobacco workers (exposed workers) smoked in the three study areas, while in the control areas, 57%–75% of agricultural labourers were smokers. In Gujarat, only a minority of exposed women workers were smokers: 6.8% of the women working in the *beedi* tobacco fields of Sanand and 0.4% of the women working in chewing and snuff tobacco fields of Anand. In the control areas of Gujarat, 0%–0.4% of women agricultural workers smoked. In Andhra Pradesh, the percentage of smoking in women workers was higher (36% in the exposed women and 10.6% in the control women). With regard to the habit of taking snuff, about 31% of women *beedi* tobacco workers in Sanand, and 51% of women labourers in the control area had this habit. In Anand, most women workers were occasional snuff users.[203–205]

Headache, giddiness, nausea and vomiting were the four most common symptoms observed in all tobacco workers. The overall prevalence of GTS was higher (86.2%) among *beedi* tobacco cultivators compared to cigarette tobacco cultivators (60.6%), and in chewing and snuff tobacco cultivators (47.0%), as shown in Table 4.16. Among men, the proportion of workers with GTS was higher in the chewing and snuff tobacco-growing areas of Anand, Gujarat and than in the cigarette tobacco-growing area of Andhra Pradesh. No symptoms were reported among the control group.[203–205]

According to Gehlbach *et al.*,[206] cigarette smoking affords protection against this occupational illness, but in all the three National Institute of Occupational Health (NIOH) studies, workers who smoked were found to have a higher prevalence of GTS.[203–206] Studies have reported a substantially higher urinary excretion rate of nicotine and its

Table 4.16 Green tobacco sickness (GTS) among workers engaged in *beedi* tobacco cultivation in Sanand and Anand, Gujarat and Rajahmundry, Andhra Pradesh[203–205]

GTS symptoms*	No. of subjects					Total *n* (%)
	Beedi tobacco workers	Chewing and snuff tobacco workers		Cigarette tobacco workers		
	Sanand, Gujarat**	Anand, Gujarat		Rajahmundry, Andhra Pradesh		
		Men	Women	Men	Women	
Headache	162	156	107	NR	NR	425 (56.9)
Weakness	NR	NR	NR	32	96	128 (17.1)
Giddiness	137	143	102	22	65	469 (62.8)
Abdominal pain	NR	1	3	6	39	49 (6.6)
Nausea and vomiting	103	80	84	6	6	279 (37.3)
Increased sweating	NR	4	0	2	7	13 (1.7)
Breathlessness	83	NR	NR	NR	NR	83 (11.1)
Total subjects	250	195	127	43	132	747 (100)

NR: not recorded
*Subjects may complain of one or more symptoms at a time
**Men–women break-up not available for this area



Fig. 4.3 Clean hands after the use of nylon gloves

major metabolite cotinine among different groups of exposed workers handling all types of tobacco, compared to workers in the control group.[207,208]

Intervention studies on protection for workers

Intervention studies were carried out by providing seamless knitted nylon gloves to a group of non-flue-cured virginia (FCV) tobacco harvesters who suffered from GTS.[208] To check the efficacy of the gloves, urinary excretion levels of nicotine and cotinine were selected as markers. The first urine sample was collected after 15 days of work, without the use of gloves, at the end of the work shift. The second urine sample was collected after 15 days of work, with the workers using gloves, at the end of the day's work. Simultaneous measurement of nicotine and cotinine were performed by the method described by Doctor *et al.*[209]

The use of any type of gloves significantly reduced the levels of nicotine ($p<0.01$) and cotinine ($p<0.0005$) in the urine. Urinary concentrations of nicotine and cotinine decreased after 15 days of use of gloves in 87% of the workers. All the workers reported that the use of gloves completely prevented smearing of gummy plant sap on the hands, abrasions on their palms, peeling of the skin around the nails, bitter taste in the food due to the plant sap, and work-related symptoms such as headache and giddiness (Fig. 4.3).

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4.8 GREEN TOBACCO SICKNESS AMONG TOBACCO HARVESTERS

KEY MESSAGES

- Workers engaged in tobacco cultivation suffer from an occupational illness known as green tobacco sickness (GTS), an acute form of nicotine toxicity resulting from absorption of nicotine through the skin.
- The use of gloves prevents nicotine absorption through the skin and thus prevents GTS. Gloves also prevent abrasions and cuts.

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5

Economic, Ecological and Environmental Effects of Tobacco Use

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The argument that is most frequently offered by the tobacco industry and its apologists to oppose tobacco control, is that the tobacco trade offers bountiful revenue to the government and provides several other economic 'benefits' to the society. The countervailing costs of health care for tobacco-related disorders and the loss in productivity due to early deaths caused by tobacco are not considered in such partisan projections. Even in the wider arena of public debate, these costs are most often not quantified adequately to be properly contrasted with the revenue generated by tobacco. The environmental effects of tobacco seldom gain mention when the harm done by tobacco is discussed in policy documents. Even in the public mind, it is only second-hand smoke that has come to be recognized as an environmental hazard in recent years. The environmental impact of tobacco agriculture and manufacture is less well known, despite the large extent of deforestation that results from use of wood fuel for curing and clearance of forest land for tobacco cultivation. Likewise, the large-scale use of hazardous pesticides goes mostly unnoticed.

This chapter provides an overview of the social costs of tobacco arising from the health effects of tobacco and also profiles the adverse environmental effects of tobacco, especially as relevant to

the Indian context. The methodologies used for evaluating the economic costs of tobacco use are critically appraised and estimates are provided of the costs arising from the major tobacco-related diseases—cancer, coronary artery disease (coronary heart disease) and chronic obstructive lung disease (chronic obstructive pulmonary disease).

The chapter also describes the major environmental effects of tobacco, which include deforestation, soil erosion, loss of biodiversity, pollution by pesticides and excess use of fertilizers. The social costs of tobacco cultivation are also noted, especially with respect to the effects on children and women.

5.1

Health Care Costs

This section provides an overview of the concept and components of the costs entailed by tobacco consumption, followed by a review of some available estimates of the personal and social costs of tobacco consumption and tobacco-related diseases on the basis of available studies and estimates. An attempt has been made to update these estimates on the basis of secondary information.

Costs of tobacco use: Personal and social

The costs of tobacco consumption are related to the personal costs such as those arising from the consumption *per se*, costs of adverse health effects and their medical care as well as the social costs of tobacco such as those related to loss in productivity and damage to environment. Each of these costs needs to be estimated as comprehensively as possible to obtain an estimate of the total costs arising from tobacco. For example, the cost of tobacco products (unlike most other commodities of daily use) includes not only the direct outlay on them but also of those products required for using them (such as matchsticks, lighters, ashtrays, etc.).

References to the extensively documented health consequences of smoking can be found in Stoddart *et al.* (1986).[1] Smoking is a major cause of morbidity and mortality and imposes considerable costs, including both the direct costs of health care and indirect costs of lost productivity. It may cause property loss through fires, raise the cost of fire protection, and results in increased production costs of many goods and services through the need for extra ventilation and maintenance. In addition, smoking imposes intangible costs of discomfort, pain and suffering on smokers, their families and others. The list is by no means exhaustive. Among important omissions, one may mention the cost of bereavement and the resulting emotional and social distress, the cost of providing social security and benefits, the absence of which, especially in developing countries with high levels of poverty and economic disparity, causes acute human suffering, disrupts dependants' lives, and swells the ranks of the poor. The life insurance premium rates in countries with higher prevalence of tobacco use would also be higher, which is an extra cost imposed on the non-smokers by smokers.

These externalities inflict social costs on smokers as well as non-smokers (as in the case of second-hand smokers), users of health and medical services, the larger civil society, government finances and the future generations on account of environmental smoke, deforestation resulting from the extensive use of wood in flu-curing of tobacco used for manufacturing and packaging cigarettes, etc. An important issue that arises from the analysis of aggregate costs of tobacco consumption concerns the redistribution effects among individuals, households and regions, depending on whether a person/family/region is a net producer or a net consumer of the tobacco products.

Of equal importance are the real costs entailed in looking after the smokers during their illness, the loss of production and lower productivity on account of avoidable tobacco-related diseases and mortality, higher overall health and welfare spending, opportunity cost of foregone consumption (as a consequence of committing one's limited purchasing power to the purchase of an acknowledged demerit good such as tobacco products). These personal costs, externalities and social costs, moreover, are not confined to the actual period over which tobacco consumption takes place.

Most effects of tobacco consumption (on both smokers and non-users) materialize with a time lag of varying lengths and, thus, the effects of

present consumption of tobacco would appear in the future. Hence, the formulation that 'the current value of the time stream of current and future external costs incurred is a result of past and present smoking'.[2]

One can visualize the difficulties involved in working out the cost of tobacco use, which has to be the sum total of private, direct costs plus social, external costs, such as the costs of fire hazard and littering, comprising various proportions of tangible and intangible costs (including the most tricky question of valuing human life and its longevity), avoidable and unavoidable costs, real, pecuniary and non-pecuniary, physical and psychic costs, etc.

The otherwise complex issue of externalities (social costs) becomes incredibly more complex requiring massive, fine-tuned, disaggregate data, if one were to take into account the really substantive redistribution issues. Among the redistributive effects of tobacco use, one may mention those from non-smokers to smokers, from tobacco-consuming areas to tobacco-producing areas, inter-generation transfers, transfers of pension benefits from smokers with short life spans to non-users of tobacco, transfer to tobacco-related illness-inflicted persons from healthy non-tobacco users, etc.

In fact, valuation of human life transcends any estimate of financial gains or costs and is a major factor for treating tobacco as a demerit good, better termed as 'bad'. Warner (1998) sums up the difficulties and dilemmas one faces while dealing with the costs of tobacco consumption insofar as they bear on the mortality aspect. Clearly, no 'economic' valuation of life and longevity is possible as it is simply invaluable and beyond numbers. The level of subjectivity involved, and cultural and value differences render any such exercise highly controversial.[3]

This recognition of tobacco as a demerit good (or bad) is the basis for treating an individual's outlay on tobacco as a cost. Globally and nationally, there is enough evidence regarding society's recognition of tobacco use as a menace and the need to go in for tobacco control.[4] It may be noted that the mainstream neo-classical theory maintains that free choice of a normal commodity by a rational consumer (disregarding the theory of so-called 'rational addiction' popularized by tobacco interests) implies that except on the last unit purchased (for which the marginal cost is presumed as an axiom to equal marginal utility), the consumer gets consumer's surplus on all intra-marginal units purchased. Similarly, there accrues producers' surplus to the producers. This theory fails to distinguish between utility and disutility and assumes that everything bought by a person necessarily yields some utility, i.e. a yield of positive satisfaction.

It makes sense to discard this approach for a demerit commodity such as tobacco owing to its adverse health, ecological and productivity effects, and the universal social acceptance of the objective of tobacco control. The point is that the objective fact of personal and social disutility from tobacco, to whose addiction people are lured at a rather impessionable age by means of a multibillion disinformation campaign, far outweighs its subjective utility. Moreover, how could an addictive substance such as tobacco reflect consumers' freedom, as once hooked on to it, one has to continue its use rather slavishly? As a result, the outlay on tobacco products would have to be regarded as a personal financial cost. It can also be evaluated in terms of foregone consumption, and would be quite high for the poor and the ultrapoor.

Controversies

However, the assessment of the costs of tobacco use has become complicated and controversial on account of a lot of 'research' sponsored by the tobacco interests. This is not surprising as deliberate deception by means of *suggestio falsi* and *suppressio veri* is a long-standing practice by the tobacco majors. An exposition on 'rational addiction', a concept espoused by the tobacco industry, is provided by Lal and Scruton.[5]

As a result of the subterfuge attempted by the tobacco interests, identification and appraisal of the social costs of tobacco use have given rise to some controversies. It has been argued that the costs entailed by the sicker and shorter lives of tobacco users have to be reduced owing to the lower claims on pension and social security benefits that they are able to make. On the contrary, the contributions made to social welfare and security funds by tobacco users with shorter life span are used for supporting the longer-living non-users of tobacco. In addition, it is maintained that nursing homes incur higher costs for treating the longer-living non-smokers notwithstanding the fact that the shorter lives of the smokers are likely to be marked by a higher incidence of diseases. Hence, it is argued by tobacco lobbyists that many costs of tobacco use such as the medical cost for treatment of tobacco-related diseases of smokers, costs incurred by secondary smokers and the displacement that smoking-related diseases cause to the treatment of non-tobacco-related diseases (pecuniary costs) have to be offset against the savings of pension benefits and increased medical expenses during the twilight years that smokers would impose should they be surviving.

These ingenious arguments appear on closer examination to be specious. Surviving non-smokers contribute to the family, economy and society, and even to pension funds for a longer period and often, coming as they do from relatively better-off sections (among whom the tobacco prevalence rate has been found to be lower), their contributions are greater. A detailed exposure of the tobacco industry tactics and behaviour is provided by the World Health Organization (WHO) (*see also* Section 6.5).[6] A more substantive argument against taking such a financialized view of human life, suffering and disability is that preserving and protecting human life is an overriding value, and no abstract arguments based on the presumed rational and free choice (which has been shown to be misconceived in any case) can underplay the huge personal and social costs entailed by tobacco consumption.[2,3,7]

Another line of defence mounted by the tobacco interests to scale down the costs entailed by tobacco consumption is to refer to the contribution made by tobacco-related economic activities to income, employment, government revenue, trade balance, etc. These so-called benefits of tobacco production and consumption are based on a misreading of the economic processes, implying that the money saved on tobacco consumption has no alternative avenues of either consumption or investment, and that these 'gains' are 'incidental' gains. Once the alternatives to tobacco are recognized, one has to factor in the economic contribution from alternative uses, which may, in course of time, well exceed those from the tobacco activities. Thus, there does not seem to exist any case for netting the gross economic costs imposed by tobacco consumption either on account of the pension saved and medical expenses or the putative economic contribution of tobacco-related activities.

It should be clear from the above that not every element of cost is amenable to quantification and valuation. However, this is not reason enough to ignore such costs in preparing the social balance sheet of tobacco use.

Direct personal cost: A macro estimate

The direct costs of tobacco consumption can be obtained quite reliably from the National Accounts Statistics (NAS) of India. It gives the annual time series of private final consumption expenditure (PFCE) at constant prices in the aggregate and for some major groups such as tobacco and tobacco products, medical care and health services, food, etc. (Table 5.1).

The direct cost of both smoking and non-smoking tobacco products excluding the cost of accessories such as matchsticks, lighters, *chillums,* ashtrays, etc. to the consumers is quite large, most often between 2% and 3% of the total PFCE, and between 4% and 6% of the amount spent on food.

Table 5.1 Private final consumption expenditure (PFCE) on tobacco and tobacco products in India: A comparative profile. Direct cost of tobacco consumption: (1993–1994 to 2000–2001) Rs in billion (at 1993–1994 prices)[8]

	1993–1994	1995–1996	1996–1997	1997–1998	1998–1999	1999–2000	2000–2001
Tobacco and its products	12.309 (2.1)	14.175 (2.2)	11.537 (1.7)	20.956 (3.0)	12.238 (1.6)	22.813 (2.9)	19.547 (2.4)
Food	29.0841 (50.6)	31.1866 (48.8)	34.1151 (49.5)	32.8207 (46.4)	36.0866 (48.0)	35.7328 (45.0)	34.7524 (42.8)
Medical care and health services	19.543 (3.4)	24.232 (3.8)	26.878 (3.9)	29.813 (4.2)	33.079 (4.4)	36.712 (4.6)	40.728 (5.0)
PFCE in the domestic market	57.4772 (100)	63.8938 (100)	68.9566 (100)	70.7285 (100)	75.2440 (100)	79.3709 (100)	81.1160 (100)

Values in parentheses are percentages of the total PFCE
Source: Central Statistical Organisation, 2002

A significant aspect of the personal cost of smoking and non-smoking tobacco consumption emerges by comparing the PFCE on tobacco and its products to that on medical care and health services (the latter excludes public spending on health and medical services). The data, as summarized in Tables 5.1 and 5.2 (for details *see* National Accounts Statistics of India 1951 to 1995–1996, EPW Research Foundation, Mumbai, 1997) show that from 1950–1951 to 1973–1974, the PFCE on tobacco and its products exceeded that on medical care and health services.[9]

From the subsequent period up to the present, the direction is reversed, though the difference is less than 1% point only. Interestingly, after 1986–1987, the spending on tobacco and its products became lower (between 1.5% and 2%) of the total PFCE than it was up to the mid-1960s (between 3% and 3.5%). The proximity in the shares of consumer spending claimed by tobacco products, medical care and health services indicates widespread prevalence of a 'bad' or demerit good such as tobacco. Moreover, long periods of extensive tobacco use may be considered one of the factors that have a negative impact on the health of society. It could be a factor partly responsible for the increased proportion of private spending on health and medical services in the later periods. In India,

Table 5.2 Private final consumption expenditure (PFCE) on tobacco and tobacco products in India: A comparative profile. Direct cost of tobacco consumption: (1950–1951 to 1990–1991) expressed as rupees in crores (at 1980–1981 prices)[9]

	1950–1951	1960–1961	1970–1971	1980–1981	1990–1991
Food	21.597 (58.5)	31.181 (59.2)	40.374 (56.4)	53.021 (53.4)	75.175 (48.4)
Tobacco and its products	1.223 (3.3)	1.738 (3.3)	1.908 (2.7)	2.518 (2.5)	2.331 (1.5)
Medical care and health services	0.465 (1.3)	0.824 (1.6)	1.704 (2.4)	2.970 (3.0)	3.672 (2.4)
PFCE in the domestic market	36.937 (100)	52.714 (100)	71.522 (100)	99.292 (100)	15.5454 (100)

Values in parentheses are percentages of the total PFCE
Source: EPW Research Foundation. National Accounts Statistics of India, 1950–1951 to 1995–1996

the total private spending on health and medical services is as large as 85% of the total spending under this head.[10] This factor underscores the seriousness of the increased outgo on medical services out of family budgets.

It may be mentioned that the average of per capita per day direct cost of tobacco consumption for the entire population of India for the seven-year period from 1994–1995 to 2000–2001 amounted to Rs 0.40. Given the prevalence rate of tobacco of about 20% for smokers and non-smokers, the PFCE representing the direct personal cost approximates to Rs 2 only. In the Indian scenario, this is a significant cost as the per capita per day PFCE at constant (1993–1994 prices) prices was about Rs 22 for the year 2000–2001 (NAS, 1951 to 1995–1996). This burden is especially onerous for the population below the poverty line (about 260 million). This is especially so for the rural poor, as the agricultural per capita income is around one-fifth to one-sixth of the non-agricultural incomes. The personal opportunity cost to the poor in rural India, in terms of foregone consumption of goods on account of addiction to a 'bad' such as tobacco products, can thus be seen to be substantial.

From the days of Adam Smith, tobacco products have been considered a luxury. The personal direct costs (excluding the indirect costs to smokers and users of other tobacco products on account of tobacco-related diseases and the costs arising from the tobacco-related morbidity and mortality) by themselves are very high. Moreover, the sacrifice of the opportunity cost in terms of goods and services (e.g. items of essential consumption for children such as milk and education) also translate its contribution to social costs as society and the economy tends to suffer from a sick population with a shorter life span.

In most of the literature on the subject, the neo-classical view of the rational consumer rules out the price paid for a freely chosen commodity as a cost. On the contrary, it is the basis of consumer's surplus in terms of a utility gain. Therefore, the apologetic view advanced by tobacco industry advocates is untenable.

Cost estimates

Estimates of the burden of management of tobacco-related diseases, especially the three main diseases—cancer, coronary artery disease (CAD) and chronic obstructive lung disease (COLD)—have often been made at the micro-level by means of case studies relating to a specific disease in a specific region covering various well-defined micro socioeconomic and ethnic groups. Most such studies provide linkages between morbidity and mortality and tobacco use, without in general trying to work out the cost implications of disease and death in financial terms, let alone the social costs.[11] It is therefore clear that the direct and indirect, personal as well as social costs have not been estimated in these studies. Even when some attempt has been made to work out the cost implications, the cost coverage in most such studies remains partial. This feature is understandable because of the enormous data requirements. Moreover, even the conceptual foundations for such exercises are far from being clear and usable for quantification. Then, there are serious and sizeable data gaps. In fact, few countries collect and publish such statistics on a regular basis. In any case, such data systems are quite costly as well. Hence, it is not surprising that there is little published work providing estimates of total cost (including all kinds of personal and social costs) imposed by the three major tobacco-related diseases on a country as a whole, let alone concerning all the 26 diseases attributable in varying degrees to tobacco use. At least one study by Rath and Chaudhary, completed in 1999, made an attempt to estimate the total national costs attributable to the three major tobacco-related diseases.[12]

In the study, to assess the cost of management of tobacco-related cancers, a cohort of 195 patients with cancers of various sites was enrolled at the All India Institute of Medical Sciences, New Delhi. The item-wise expenditure made by the patients and their relatives/friends was recorded, under various headings, namely, consultation, investigations, treatment with

different modalities, transport for the purpose, and any additional costs incurred for lodging and boarding for a period of 3 years, or until death or recovery. Information on the actual loss of wages during the period of treatment of the disease was also collected. The data on cost were collected for the year 1990–1991 based on the last income level, expected remaining age of the patient was estimated from the standard life tables available for different areas in India. A discount of 10% was used to convert the future cost stream to a common/current time-frame. Institutional cost was assessed from the records of the institution providing treatment and the information on services used by the patient. It can be seen that the changes in the cost of treatment on account of changes in prices in the future were not factored into the calculations for this study.[12] The cost data concerning the management of tobacco-related cancers as estimated by the study are summarized in Table 5.3.

The patients in the cohort spent an average of Rs 17,965 (including loss of income due to absenteeism), with another Rs 4009 being contributed by the institution in the form of various services. The loss due to premature deaths amounted to Rs 112,475. Thus, the total average cost due to a patient with tobacco-related cancer diagnosed in 1990–1991 was Rs 134,449. Since the cost data from the patients were collected for a period of 3 years beginning 1990–1991, it appears that the cost information relates to the year 1993–1994.

Direct cost of a case of tobacco-related cancer (to the patient and the treating institution) amounted to Rs 17,774 (Rs 13,765 was the cost of the patient or their relatives and Rs 4009 to the treating institution). This category included expenditure on consultations, investigations, treatment, travel and lodging for treatment, and extra money spent for food during the time of treatment. Average indirect cost due to tobacco-related cancers was estimated to amount to Rs 116,595 (Rs 4120 due to absenteeism on account of treatment, and Rs 112,475 owing to loss of income on account of premature death).

Table 5.3 Cost of tobacco-related cancers[12]

Expenditure category	Cost (in Rupees)
Expenditure by patients	17,965
Loss by the institution	4009
Loss due to premature death	112,475
Average cost of tobacco-related cancers (at 1990 level)	134,449
Average cost of tobacco-related cancers (at 1999 level)	Approx.350,000

Source: Rath and Chaudhary, 1999

At the same time, an estimation of the cost of management of CAD and COLD was carried out at Chandigarh, and data on expenditure were collected in a manner similar to the study on tobacco-related cancers (both these studies were sponsored and coordinated by the Indian Council of Medical Research [ICMR]). However, the approach adopted was that of a cross-sectional study, wherein the expenditure/losses of these patients were determined for the past 1 year. The cost of health care was divided into two components, one of which was the actual cost incurred by the patient and/or his caregiver (relative or friends), while the second was the expenditure incurred by the state/employer on account of the early morbidity or premature death of the patient. Data were collected from 500 patients with CAD, 423 with COLD and 28 with both CAD and COLD. Financial losses suffered by caregivers (relatives/friends) were also assessed. Indirect losses, borne by the state/employer, on account of loss of efficiency at work due to morbidity were calculated and losses for the future estimated. Reassessment of the cost after 1 year, in 534 of these patients, did not reveal any significant differences in expenditure as compared to their expenditure during the previous 1 year.

The per capita direct losses borne by the patients and/or their caregiver were substantial (Rs 8520.30 and Rs 2257.60 per year with patients of CAD and COLD, respectively). Most of the patients studied had relatively low personal and family incomes and consequently low capacity to bear the loss of income arising from confinement due to illness.

Thus, these expenses constituted a sizeable financial burden on these patients (both directly and in terms of the opportunity cost of foregone income/consumption). The annual losses indirectly borne by the state/employer were still larger (Rs 6388.40 and Rs 9694.10 per year for patients with CAD and COLD, respectively). The average annual cost of a case of CAD including the expenditure by patients and the treating institution, the loss of wages (if entailed), and the loss of efficiency amounted to Rs 14,909 in 1992. Logistic regression analysis showed that age and education significantly influenced the expenditure by patients with CAD.[12] Similar annual cost for a patient with COLD was Rs 11,952. Variations in personal income significantly influenced the expenditure by patients with COLD.

Using the same rate of discount as used in the ICMR study, the average cost of tobacco-related cancers in 1999 were estimated to be approximately Rs 350,000. It can be seen that the changes in the cost on account of likely or actual changes in the price level, etc. seem to have been taken into account while arriving at the 1999 cost estimates. The number of cancer cases attributable to tobacco use were estimated at 163,500. Thus, the cost of tobacco-related cancers for the year 1996 was estimated to be Rs 57.23 billion.[12] The current average annual cost of a case of CAD was estimated at Rs 29,000. With an estimate of 4.45 million persons developing CAD due to tobacco smoking in India, the national cost of the disease due to tobacco was put at Rs 129.05 billion. With an average annual cost of Rs 23,300 and 39.2 million estimated cases of COLD in India due to tobacco smoking in 1999, the national cost of COLD due to tobacco amounted to Rs 91.336 billion. Thus, the cost due to three major tobacco-related diseases in India in 1999 was placed at Rs 277.611 billion or say, Rs 27,760 crore.[12] These results are summarized in Table 5.4.

Table 5.4 Cost of major tobacco diseases in India[12]

	Cancers	Coronary artery disease (CAD)	Chronic obstructive lung diseases (COLD)
Number due to tobacco			
1996	154,300	4,200,000	3,700,000
1999	1,63,500	4,450,000	3,920,000
Average cost (1999)	3,50,000	29,000	23,300
Total cost in billion (1999)	57.23	129.05	91.34

Total loss (1999) = Rs 277.611 billion or US$ 6.5 billion
The total may not be exact because of rounding off of the data.
Source: Rath and Chaudhary (1999)[12]

It is clear that a pioneering attempt has been made in the above study to at least generate some numbers, with an apparently cautious and conservative approach, to obtain a sense of the magnitude of the massive social and economic cost of the major diseases connected with prolonged and substantial use of tobacco which, of course, becomes visible with varying time lags for different persons. Of the various elements of the cost of tobacco-related adverse health consequences identified earlier in this section, there are many which the studies under reference have not attempted to quantify. However, it is possible to update this exercise by revising the cost estimates on the basis of the current level of prices and nominal current income in order to estimate the income and production losses, assuming that the other aspects remained unchanged. Such an exercise was carried out for the year 2002–2003 and the detailed calculations are reported in Table 5.5.[12] According to these estimates, the total and indirect costs of the three major tobacco-related diseases in India seem to increase from Rs 277.60 billion in 1999 to Rs 308.33 billion in the year 2002–2003. This amounts to an increase of over 11% over a period of two years without assuming any acceleration either in the burden of the diseases or the cost of management of such diseases. It may be noted that this cost imposed by unchecked tobacco consumption (in the year 2002–2003) exceeds the total combined revenue and capital expenditure (Budget estimates) by the Centre and the States on medical and public health, water supply and sanitation which, according to the Indian Public Finance Statistics (2002–2003), amounted to Rs 290.49 billion.

Table 5.5 Estimates of the cost of three major tobacco-related diseases for the year 2001–2002 based on projection of the 1999 estimates by Rath and Chaudhary[12]

Population in 2001–2002	1037 million
Population in 1999–2000	1001 million
Number of coronary artery disease (CAD) cases	4.45 million
Percentage of CAD cases	0.4%
Number of tobacco-related cancer cases	163,500
Percentage of tobacco-related cancer cases	0.2%
Number of chronic obstructive lung disease (COLD) cases	39.2 million
Percentage of COLD cases	3.92%
Estimated number of cases in 2001–2002 of	
CAD	4.6 million
Tobacco-related cancers	0.2 million
COLD	40.7 million
Cost structure, 1999–2000	
CAD	
Direct cost	Rs 16,559
Indirect cost	Rs 12,441
Total cost	Rs 29,000
COLD	
Direct cost	Rs 4404
Indirect cost	Rs 18,896
Total	Rs 23,300
Cancers	
Direct cost	Rs 49,980
Indirect cost	Rs 300,020
Total cost	Rs 350,000

1. Direct cost increased by 11% (based on the increase in WPI index number (base 1993–1994) in 2001–2002 over 1999–2000). (*Source:* Economic Survey, 2002–2003, Ministry of Finance, Government of India.)

2. Indirect cost increased by 19.2% (based on the increase in nominal Net National Product (NNP) index numbers with 1950–1951 base. (*Source:* Economic Survey, 2002–2003, Ministry of Finance, Government of India.)

3. Using 10% discount rate 6th the additional direct and indirect costs for the year 2001–2002 have been reduced by 10%.

Projected cost in 2001–2002	
CAD	
Direct cost	Rs 16,559
(+) 1%	Rs 166
Indirect cost	Rs 12,441
(+) 9.2%	Rs 1144
Total cost	Rs 30,310
COLD	
Direct cost	Rs 4404
(+) 1%	Rs 440
Indirect cost	Rs 18,896
(+) 9.2%	Rs 1738

Table 5.5 (*Cont.*) Estimates of the cost of three major tobacco-related diseases for the year 2001–2002 based on projection of the 1999 estimates by Rath and Chaudhary[12]

Total cost	Rs 25,478
Cancers	
Direct cost	Rs 49,980
(+) 1%	Rs 4998
Indirect cost	Rs 300,020
(+) 9.2	Rs 27,602
Total cost	Rs 382,600

Total cost of CAD: 4.61 million × Rs 30,310 = Rs 139.7 billion

Total cost of COLD: 40.65 million × Rs 25478 = Rs 103.57 billion

Total cost of cancers: 0.17 million × Rs 382600 = Rs 65.04 billion

Total cost of the three = Rs 308.33 billion

Major tobacco-related diseases in 2001–2002 = Rs 308.33 billion

With some new data regarding the burden/incidence of disease and mortality, the estimates can be further strengthened and updated. Some recent studies have come out with newer estimates of mortality attributed to tobacco-rebated diseases. These may be examined in the context of tobacco-associated all-cause mortality assessed by WHO. According to this estimate, all tobacco attributable deaths for India in 1998 were estimated to be 3.83 million amounting to 5.09 million disability-adjusted life-years (DALYs). According to another WHO estimate, the mortality figure is projected to rise to 1.5 million, i.e. 13.3% of total mortality in 2020 and an increase of 319.64% over a period of 22 years. This value gives an arithmetic average increase of 50,500 additional deaths per year owing to tobacco-associated diseases.

Despite a legal requirement in India for registering births and deaths, but not for obtaining a Medical Certificate for Cause of Death (MCCD), the data from death certification provide inadequate and not too reliable coverage. According to the data published by the Registrar General of India in 1999 (for the year 1995), only 14.2% of registered deaths were obtained by MCCDs, though there was a great deal of regional variation. With such a thin basis, not much reliance can be placed on these data. However, based on the figures provided by the Sample Registration System (SRS), which is a large demographic survey, 1.56% deaths were due to chronic obstructive pulmonary disease (COPD); out of which 2.3% were attributed to tobacco. This gives a figure for mortality of 58,000 for the year 2000, which is estimated to go up to 60,000 in the year 2004. By making various adjustments, the number of deaths attributed to tobacco-related COPD were estimated to be 256,493 for the year 2000.

Owing to the paucity of a regular, comprehensive and reliable database for tobacco-related diseases, one has to make use of a number of limited-coverage data sources. The National Cancer Registry Programme (NCRP) of the ICMR has been operating since 1982, and has been extended to cover additional areas. According to this source, age-adjusted incidence rates for cancer of specific sites related to tobacco and all tobacco-related cancers per 100,000 of population have been estimated for various centres. Similar mortality incidence rates have also been arrived at. However, it is doubtful whether data from six centres can be used for arriving at any national-level estimates for a country as large and differentiated as India. However, limited exercises have been undertaken to estimate the all-India burden of tobacco-related cancers, which vary from 7 to 9 million new cancer cases in India every year.[10] According to this source, 'the proportion of tobacco-related cancers relative to all cancers at all sites (using both PBCRs and HBRCs under NCRP) averages about 46% in males and 16% in females. Therefore, it is estimated that there would be 0.21–0.28 million

(0.15–0.20 in males and 00.6–00.8 million in females) new tobacco-related cancers every year in India' (*see also* Section 4.2).

It is clear that the burden of tobacco-related diseases remains inadequately investigated, recorded and estimated. This makes it very difficult to have accurate and up-to-date quantified information on the health care costs due to tobacco-related diseases. However, from the limited facts available, it is also clear that the tobacco menace has assumed massive, epidemic proportions.

Since the mortality and morbidity estimates given by the ICMR study[12] appear to be in tune with those mentioned above, and are based on a comparatively sounder and broader basis, it appeared advisable to use the cost estimates arrived at by this study, and upgrade them on the basis of new price and income data, to try and obtain a broad sense of the magnitude of the total cost, i.e. both personal and social cost, of tobacco-related diseases.[12] Given the present state of monitoring of mortality and morbidity in India, it does not seem possible to do anything better than make such broad estimates (as provided above for the year 2002–2003), which at least give a sense of the magnitude of the issues involved in estimating the burden of tobacco-related diseases, and the personal and social direct and indirect costs imposed by these diseases.

5.1 HEALTH CARE COSTS

KEY MESSAGES

- The total social costs of tobacco products exceed the direct outlay on them, owing to morbidity, mortality and negative externalities associated with the consumption of tobacco products.
- The costs inflicted by tobacco consumption extend much beyond the direct users to cover secondary smokers as well as non-users, and are spread over a period much beyond the period of actual consumption of tobacco.
- The recognition of the costs of tobacco has been obfuscated and made opaque by the unethical tactics and practices by the tobacco lobbies.
- Worldwide recognition of the perils of the pandemic of tobacco have led to the recognition of tobacco as a demerit good, i.e. a public 'bad'.
- The employment, income, public revenue and foreign exchange earnings associated with tobacco production and consumption are incidental, and the replacement of tobacco consumption by other goods would surely lead to such flows of benefits from the other goods; at the most, some costs of transition are involved.
- The direct cost of tobacco consumption in India, aggregating to around 2%–3% of the total private final consumption expenditure (PFCE) in the economy over a long period of time, is more or less on par with the total private final spending on health care and medical services, while the updated total cost entailed by the major tobacco-related diseases

5.2

Ecological and Environmental Effects of Tobacco Use

Environmental implications of tobacco

Growing tobacco impacts the environment in different ways. Like all plantation crops, tobacco requires clearing of fertile land. Since it is a remunerative cash crop in the short term, it lures farmers to clear more forests to reap more profits. This means that farmers may forsake planting subsistence crops, often risking far too much in anticipation of earning money. As tobacco is processed in stages, it consumes fuelwood, causing deterioration of forest cover. It grows in drylands, is water-demanding, and consumes large quantities of fertilizers and pesticides. The making of cigarettes and cigars also produces large quantities of waste in the form of tobacco slurries, solvents, oils and greases, paper, wood, plastic, packaging materials and results in air pollution.[13] In the United States of America, for example, the tobacco industry ranks 18th among all industries in the production of chemical waste.

In 1995, the global tobacco industry produced an estimated 2262 million kg of manufacturing waste and 209 million kg of chemical waste. Among the many waste products of the tobacco industry, which are considered toxic by the US Environmental Protection Agency (EPA), is nicotine, obtained during the production of low-nicotine cigarettes. Globally, around 300 million kg of nicotine waste are produced annually by the tobacco industry. Despite this, cigarette and other tobacco production units have no regulatory obligations. Worldwide, only six countries have any regulations on chemicals produced during and from cigarette production.[14]

Environmental costs, if incorporated into the cost of manufacturing of the product (say cigarettes), would increase the price of raw tobacco by 20% and finished product by 40%, according to Paulo De Riotta, an environmental economist with the University of Reading.[15] If regulations could push for full environmental cost accounting, companies would be compelled to raise the price of cigarettes, which would prove to be a major deterrent for consumers and the industry.

Deforestation

Global evidence of deforestation

Tobacco contributes to deforestation in three ways: forests cleared for cultivation of tobacco, fuelwood stripped from forests for curing and forest resources used for packaging of tobacco, tobacco leaves, cigarettes, etc.

Globally, according to one estimate, 38% of the forest cover losses are attributed to clearing for cultivation, about 42% is attributed to fuelwood needs, about 8% occurs because farmers abandon old farms and seek new land, and the rest (12%) meets the packaging needs of cigarettes.[16] In many developing countries, such as India, Zimbabwe and Indonesia, forest clearance for cultivation has decreased drastically because of awareness about conservation. However, sourcing of fuelwood for curing of tobacco is still done surreptitiously from neighbouring forests or is obtained from regions as far away as 50–200 km, thereby causing indirect deforestation. Packaging requirements are a constant need of the industry.

Tobacco-related deforestation is substantial and much larger than what had been anticipated by local communities and governments. Approximately 200,000 hectare of forests/woodlands are removed by tobacco farming each year.[17] Deforestation mainly occurs in the developing world, amounting to 1.7% of the global net losses of forest cover or, on an average, 4.6% of the total national deforestation in countries where

tobacco is cultivated.[17] Environmental criticality exists, or is emerging, in 35 countries with an estimated serious, high and medium degree of tobacco-related deforestation, mainly in southern Africa, the Middle East, south and east Asia, South America and the Caribbean.[17]

A study on deforestation due to tobacco plantations did not include India, because no (net) overall deforestation was reported from India. This was due to an increase in commercial plantations. However, tobacco's estimated consumption of wooded areas (44,000 hectare) far exceeds annual forest increases (7000 hectare).[17] Despite excluding India from this study, it was found that tobacco-related deforestation has global relevance, which could be found in all continents and which on an average contributes nearly 5% to overall deforestation in the tobacco-growing countries of the developing world. Tobacco is grown in more than 120 countries, thus constituting the most widely grown non-food crop (coffee is grown in 59 countries, jute and jute-like fibres in 25, *sisal* in 15). Although crop-specific deforestation occurs in developing countries spread all over the continents, tobacco has not been found to be a part of the research agenda on global environmental change during the past 10 years.

As tobacco is grown in fragile wooded forest areas, the level of damage to these forests from clearing and curing of tobacco varies widely. In Africa, around 5% of all deforestation is caused by tobacco. In Malawi, where the ancient dry forests of the Miombo highlands are particularly under threat, tobacco accounts for 20% of the deforestation.[18]

Use of fuelwood and deforestation

About half of the tobacco leaves produced in developing countries in Africa and Asia are cured (dried out for cigarette production) with wood. Trees from a hectare of land may be needed to cure 1 tonne of tobacco. An average of 7.8 kg of wood is needed to cure 1 kg of tobacco. According to the Economist Intelligence Unit, 'One of the major consequences of tobacco production in the Third World results from the considerable energy requirements of the flue-curing and fire-curing processes; as such, tobacco is a contributory factor in some countries to the problems of deforestation now being encountered'.[19]

Fuelwood was the main reason why Brazil has globally lost some of its tobacco markets. Due to the decreasing supply of fuelwood for curing tobacco and greater conservation pressures, farmers were forced to relinquish planting tobacco. Even today, the 100,000 Brazilian tobacco farmers need wood from 60 million trees a year to cure the tobacco they produce.[20]

Legislative restrictions largely emanating from global pressures to conserve rainforests, required all farmers to preserve 20% of their farm area as natural forest, and this was seen as a threat to tobacco production. However, tobacco companies implemented programmes to restore tree coverage in production areas. By then, even local governments realized that the wood used for tobacco curing is a major cause of damage.

Brazil, India, the Philippines and most of Africa (except Zimbabwe) use fuelwood for curing tobacco. A wood shortage is looming in Malawi and Tanzania with increasing deforestation in the tobacco-growing regions.[21]

A study based on the felling of live trees (as against dead and diseased trees, permitted by green felling norms) for fuel to cure tobacco found that tobacco estates in Malawi account for 21% of the national fuelwood consumption and contribute nearly 47% to the deforestation caused by harvesting wood biomass for fuel.[22] This study highlighted that in regions where deforestation rates are high, local impacts are large, while in large countries such as Brazil and India, because of the large geographical and forest cover, even large-scale loss of forest cover in areas where tobacco is grown, gets evened out. Another study using industry and Food and Agriculture Organization (FAO) data found that one acre of tobacco plants displaces 150 trees

from natural dryland forest.[20] For cigarette paper and packaging (to produce 100 cartons of cigarettes), 80 more trees are needed. Since high-quality card paper used to make cigarette boxes and cartons are not recycled, an additional loss of 20 trees occurs.

Industry and agricultural research organizations such as the International Tobacco Consortium and the Tobacco Institute of India (TII) have claimed to have made progress in reducing wood consumption. Industry sources claim to have reduced fuelwood consumption, for example, by 40%–55%.[23] However, several small farmers and curing plants continue to use conventional techniques which are wasteful. In flue-cured Virginia (FCV) cultivation, curing accounts for 30% of the cost of cultivation. To cure every 1 kg of tobacco leaves, nearly 6–8 kg of high-quality dry fuelwood is needed. Wood used in a single barn (of 600 kg tobacco leaf curing capacity) is sufficient to provide fuelwood for cooking and other domestic consumption for 20 regular households.[23] Efforts to reduce fuel consumption include insulation of the roof, ventilators and doors of the barn with thermocole/rock-wool/strawmit, and making slight changes in the design of the barn furnace. This resulted in the reduction of 25%–30% of the fuel cost.

Research has been conducted to evaluate the efficiency of coffee husk briquettes, sawdust briquettes and paddy husk briquettes as alternate fuels for curing tobacco.[24] In most developing countries, however, the fundamentals of flue-curing have changed little. Some traditional practices have given way to direct-fired systems fuelled by natural or liquefied petroleum gas, and have completely phased out the use of fuelwood. This is largely because it has also been found that flue-curing produces tobacco-specific nitrosamines (TSNAs). Nitrosamines are produced when nitrous oxide, a product of combustion, combines with the nicotine in tobacco leaves. TSNAs are confirmed carcinogens and hence a potential source of occupational and environmental cancer.[25] With the use of cleaner fuels, retrofitted equipment and heat exchangers, the amount of TNSAs can be markedly reduced. Emission of toxic gases such as TNSAs, polyaromatic hydrocarbons and other volatile aromatic compounds are not recognized as hazards in most tobacco-growing countries.

Evidence of deforestation in India

There are no comprehensive figures or data on how much deforestation occurs from tobacco cultivation and industry. However, evidence is available to prove that forests were cleared on a large scale in areas where tobacco is grown. One reason for not recording the decline in forests was that forests were part of revenue land, which the local administration was entitled to use for local area 'development' and conversion of forest land was permitted. In addition, large tracts of private forests have not as yet been enumerated, despite different states having promulgated Private Forest Acts. Another reason is that the relative importance of forestry as a discipline declined while agriculture dominated heavily, especially between the 1930s and 1960s. No department or ministry existed to conserve forests (Ministry of Environment and Forests came into existence in 1976). Consequently, agriculture departments took full control and diverted forest lands for agricultural purposes. There are few records on how much forest existed in dryland areas and how wood was consumed by the industry. As the forest departments classically did not consider dry and semi-arid areas as forests, no authoritative records exist for any area where tobacco was promoted.

Some anecdotal evidence of deforestation does exist. Between 1932 and 1946, promotion of tobacco spurred deforestation and scrub removal. For example, in the Kheda and Anand regions of Gujarat, nearly 64 sq. km of forests were stripped. However, local communities realized that growing tobacco was not remunerative enough as forest and grass cover was lost, and many in the community depended on milch cattle for their sustenance. By the mid-1970s, tobacco cultivation declined in Gujarat.[14] In

Motihari, Bihar, nearly 60 sq. km of land was converted from dry forest area to grow tobacco, after it was promoted in the region by the Pusa Agricultural Research Centre in the 1920s.[26]

The real success to growing quality tobacco was seen in Andhra Pradesh and later in Karnataka. In the early 1900s, cultivation of tobacco picked up rapidly but because the local administration did not offer compensation and relief during natural calamities, it soon lost favour in most districts. The interest was revived only after incentives were institutionalized and farmers knew that there were assured returns from buyers and industries. Nevertheless, from the 1940s to the 1970s, because cultivation periods were long and storage facilities were few, tobacco needed to be 'cured' quickly. Firewood and dried biomass were used excessively to desiccate the moisture and destroy the chlorophyll from harvested leaves. All neighbouring areas, especially forests and groves, were stripped of dry wood to fuel the curing process.

In the 1980s, when fuelwood was scarce, the tobacco industry took measures to protect itself. Some tobacco companies, especially those in Andhra Pradesh, promoted plantation of fuelwood trees along tobacco fields. Alternatives were also explored. In Karnataka, for example, kernel and other wastes from coffee processing is being used since 1987 to make briquettes. (Briquettes are bricks made of desiccated and compressed biomass from agricultural crops such as groundnut, coconut, coffee, etc. which are used for burning.)

In areas where fuelwood supply has decreased, farmers dry the woody stems of the tobacco plant for domestic fuel. This, in turn, has severe health impacts. A survey done in the Godavari delta of Andhra Pradesh found that in one particular village—Vadisaleru—where only tobacco and few subsistence crops were grown, fuelwood shortage was severe. The rates of tuberculosis and cataract were higher than in other villages where tobacco was not grown. Both Virginia and country tobacco (an inferior type of tobacco called Lanka *pogaku*) were cured in open barns. In this village, 10–12 quintals of wood were used for the 315 barns, or about 350 tonnes of wood consumed every year. Even for local varieties of tobacco, the cost of curing is high and energy inefficient.[27,28]

Box 5.1 How much wood may have been lost due to tobacco curing?

A scenario exercise conducted by the Indian Institute of Forest Management, Bhopal estimated that the historical use of fuelwood between 1962 and 2002, for tobacco curing and manufacture of cigarettes and other smoking consumables, has destroyed and degraded 680 sq. km of scrub forests, or nearly 868 million tonnes of wood (220 million tonnes of construction quality wood and 668 million tonnes of fuelwood), through successive extraction. In calorific terms, the wood energy lost is enough to run a thermal power plant to provide electricity to Delhi and western Uttar Pradesh for an entire year, according to this study.[16]

Unlike Brazil, the tobacco industry in India was quick to anticipate that the forest departments would not provide wood on concession. The industry devised methods to use existing varieties to be cured using other biomass (especially from other agricultural sources), solar energy, and in some areas adopted varieties that could be cured in the noon sun rather than under firewood pyres. In India, industry and agricultural extension workers have made some efforts to assuage fuelwood shortage through the supply of briquettes made of agricultural waste (coffee husk, groundnut shells, etc.) at subsidized cost.[29]

Soil erosion and related impacts

Tobacco is usually grown in dry, arid areas and Indian soils are generally poor in nutrients. Any perturbation of such a soil ecosystem means an immediate and irreversible loss of nutrients. As tobacco is usually planted as a single crop, tall tobacco plants do not offer much protection to top soil from eroding agents such as wind and rain. The use of eucalyptus, the tobacco industry's favourite tree for reforestation, is highly controversial. It grows quickly, even in dry areas, by drawing underground water. However, its fast

Table 5.6 Average annual depletion of soil nutrients in Africa by tobacco and other crops[31]

Crop (1 tonne/hectare)	Nutrient loss (kg/hectare)		
	Nitrogen	Phosphorus	Potassium
Tobacco	24.4	15.0	9.8
Coffee	2.2	14.4	2.5
Maize	1.9	0.4	46.4
Cassava	19.5	6.7	1.9

growth is at the expense of the water table. If a lower water table results, then the ability of the land to grow crops is damaged.[30]

Tobacco growing also affects soil nutrients. It depletes nutrients at a much faster rate than many other crops, thus rapidly decreasing the fertility of the soil.[31] Table 5.6 lists the average annual depletion of soil nutrients caused by tobacco and three other crops that could be its substitutes.

Since it depletes nutrients at a heavy rate, tobacco requires regular inputs of chemical fertilizers. Tobacco depletes the nitrogen, phosphorus and potassium in soil at higher rates than any food crop and, in most cases, higher than cash crops such as coffee, tea and cotton. It is particularly potassium-hungry, absorbing up to six times as much as other crops. One of the reasons for tobacco's high uptake of soil nutrients is the practice of topping the plants to stimulate leaf growth for ensuring higher nicotine content.

The Indian Agricultural Research Institute (IARI) report of 1962 reviewed the soil erosion status due to cultivation of dryland crops. Tobacco when grown singly was the most erosive crop, causing a loss of 45 kg of top soil on every acre per year. In comparison, cotton crop lost 7.5 kg, grapes about 11 kg and groundnut 12.5 kg. Erosion of soil does not only mean the loss of a large volume of soil but also includes the loss of selective nutrients and organic matter that deposit on the top layers at a greater frequency. Due to this, the lower layers get exposed to eroding agents and lose their fertility, and therefore become prone to erosion in rapid succession.

As a result of soil erosion, water retention in the soil becomes poor. In arid areas, even marginal losses imply a considerable loss for future seasons. The impact is often felt on subsistence crops such as cereals that grow in surrounding areas. A case study from Sri Lanka shows that cash crops such as tobacco hastened erosion. In the six to eight years of growing tobacco in the region, irrigation through pumps and lift irrigation were seen as essential. The production of subsistence crops such as minor cereals, plantain and amaranth declined by about 30%.[32]

Biodiversity losses

Planting a single crop for several successive seasons is detrimental to the local biological diversity. After clearing forests, the fragile forest ecosystem usually cannot recuperate from the losses of the plant and animal community. According to a study done in Tanzania, conversion of forests to tobacco farms caused the local disappearance of several animal and plants species.[33]

Displacing the indigenous flora and fauna means that tobacco will gradually become a source of pests for other crops. Another measure of biodiversity loss is the collapse of the food web, thereby destabilizing the predator–prey relationship. It is most acutely seen in the insect and small rodent population, which live in the forest fringes. Agricultural practices dominated by maximizing the productivity of tobacco also means a loss of utilizable biomass for communities. In intercropping practices, many beneficial species of insects exist that reduce crop losses. As tobacco is mostly alien to India (having originated in the Americas), several viral, fungal and insect pest diseases crossed over to local vegetable crops. In Andhra Pradesh, a survey which compared pests in three tobacco-growing and non-growing regions found that at least 12 fungal and viral diseases, and 29 insect pests were absent in farmlands and vegetable steads where tobacco was not grown. The survey concluded that since many vegetables and cereals are grown subsequent to tobacco harvests,

tobacco farms serve as constant reservoirs for re-introduction of these pests. Neighbouring crops were more susceptible because vegetables were not offered the same intensive chemical protection as is tobacco.[34]

Use of pesticides

Tobacco is a sensitive plant prone to many diseases, especially during early growth. It therefore requires huge chemical inputs: up to 16 applications of pesticide are recommended during one three-month growing period. Aldrin and dieldrin, phased out in Britain in 1969, and DDT are among the chemicals used, especially in Africa and surreptitiously in India. Methyl bromide, widely used as a fumigant in developing countries, contributes substantially to ozone depletion and is a toxic contaminant of groundwater.[35–37] In addition to being hazardous to users, chemicals may run off into water bodies, contaminating local water supplies.

There are also concerns about the high levels of pesticide use leading to the development of resistance in mosquitoes and flies, making the control of diseases such as malaria more difficult. Excessive use of DDT and other pesticides have been responsible for the resurgence of malaria and possibly DDT-resistant malaria in certain states.[38] Incidentally, in Gujarat, Bihar, Maharashtra and Andhra Pradesh, the earliest recorded resistance to insecticides in malarial vectors emerged in areas where tobacco was grown.[38] However, the intensive use of pesticide in tobacco farms continues unabated. Tobacco companies and cooperatives extend cash incentives to large- and medium land-owning farmers. In comparison, commodity buyers and promoters of other crops cannot offer the same support. Health, safety and environment issues related to tobacco are, therefore, often ignored by farmers and buyers.[39] Spurred by incentives from both the government and industry, pesticides and fertilizer consumption by tobacco farmers is about 1.5–2 times greater than any cereal cultivators in their region. On an average, normal application rates approach 30 kg of pesticides per hectare. These levels increase in dry years and can climb as high as 100 kg of organophosphates per hectare.[40] A study done in Karnataka found that frequent contact with, and spraying of, chemicals and storage of tobacco in the residential premises of farmers have adverse health effects. Chemicals caused respiratory ailments, skin irritation and allergies; problems of reduced appetite, nausea and headache are reported particularly among women and children of tobacco-cultivating households.[41]

There are several pests associated with tobacco farms. In nurseries, before sowing seed beds, several toxic pesticides are recommended for application (Table 5.7). The most important insecticides are chlorpyrifos, monocrotophos, acephate and methomyl, all used separately in large doses or in conjunction with one another.

At almost every stage of tobacco plant growth, chlorpyrifos is recommended for use. Acephate and monocrotophos are other popular pesticides used for the control of moths and caterpillars. In all tobacco-growing countries, DDT and other chlorinated hydrocarbon pesticides (except endosulphan) are banned for use on tobacco.

Fungal diseases also require a special set of chemicals to prevent their occurrence. Several fungi such as black shank (*Phytophthora parasitica* f. *nicotianae*) are serious pests. Fungicides such as Bordeaux mixture (a mixture of 40 g of copper sulphate and lime in water), copper oxychloride (fytolan or foltaf or blitox) ziram, ridomyl, carbendazim and several new-age chemicals, many of which have not been adequately tested for animal and human safety, are used. Many chemicals are sprayed in nurseries or standing crops just before the onset of the rains, which means that leaching of these chemicals in the groundwater is high. Growing and adult plants are treated with dithane, indofil, plantamycin, streptomycin and streptocyclin for fungal diseases. Nematodes (or soil worms) are another major threat.

Table 5.7 Pesticides commonly used in the tobacco industry and their health effects[14,42–44]

Pesticide	Health impact
Aldicarb	One of the most acutely toxic pesticides. Less than one-thousandth of an ounce is a lethal dose for humans. It causes chronic damage to the nervous system, suppresses the immune system and adversely affects foetuses. In human cells, aldicarb causes genetic damage. Aldicarb's agricultural formulation contains a toxic contaminant, dichloromethane, that causes damage to hearing, vision, the kidneys and liver, and is both carcinogenic and mutagenic.
1,3-D or Telone	A highly toxic soil fumigant that causes respiratory problems, skin and eye irritation, and kidney damage.
Chlorpyrifos	It has chronic neurobehavioural effects such as persistent headache, blurred vision, unusual fatigue or muscle weakness, and problems with mental functions including memory, concentration, depression and irritability.
Acephate	It is a possible human carcinogen and has been shown to have mutagenic effects and reproductive toxicity.
Monocrotophos	A highly hazardous chemical. Severe poisoning affects the central nervous system, producing slurred speech, loss of reflexes, and eventually paralysis of the extremities and respiratory muscles.
Imidacloprid	Acute effects of exposure are difficulty in breathing, loss of the ability to move, staggering, trembling and spasms. Exposure to imidacloprid causes thyroid lesions.
Thiamethoxam	It is a possible carcinogen.
Acephate	It is a carcinogen. Acute exposure causes dermal and inhalation toxicity. It is also an eye irritant.
Endosulphan	Affects the kidneys, developing foetus and liver. There is immunosuppression, decrease in the quality of semen, increase in testicular, prostate and breast cancer, and increase in defects in male sex organs. It is also mutagenic.
Methomyl	Possible carcinogen.
Bordeaux mixture	Corrosive to the mucous membranes and cornea. Causes irritation of the skin, eyes and respiratory tract. Has a metallic taste and causes nausea, vomiting and stomach pain.
Ziram	Adversely affects the reproductive system and also causes endocrine disruption.
Ridomyl	Causes birth defects in mice and guinea pigs. It is a possible human teratogen.
Carbendazim	It is a potential human hormone-disrupting chemical and reduces the sperm count and affects the development of the testicles.
Basamid	Causes eye irritation and may cause irritation of the skin and mucous membranes.
Oxydemeton methyl	Possible carcinogen.
Calyxin	Adversely affects the reproductive system and also causes endocrine disruption.
Dithane	Suspected mutagen.
Carbendazim (bavistin)	Possible human teratogen.
Karathane	Adversely affects the reproductive system.
Thiovit	Inhalation of large amounts may cause inflammation of the nasal mucosa, complicated by emphysema and bronchiectasis.

The Central Tobacco Research Institute (CTRI) has a list of recommended and banned pesticides. Yet, some tobacco companies promote the use of organochlorine and organophosphate insecticides. As they are cheap and still available despite been banned, companies promote their use as a preventive measure and convince farmers that they would reduce costs before harvests. The dusting of crops with pesticides is also not permitted, yet it is widely prevalent.[24]

As tobacco leaves are fleshy and dominate the total weight of biomass compared to other parts of the plant, pesticide accumulation is greatest in the leaves. Often companies recall batches of cigarettes if there is any evidence of trace of toxic chemicals. For example, in 1995, Philip Morris recalled 8 billion cigarettes because traces of the chemical methyl isothiocyanate (MITC, a chemical closely related to the toxin that caused the Bhopal gas tragedy) were found in the cigarette filters.[45] This chemical, a severe skin and eye irritant, is used for making paperboard for cigarette hard packs and has also been used as a pesticide. Subsequent analysis by the Centers for Disease Control and Prevention (CDC) also found MITC in Philip Morris cigarettes made after and up to a year before the recall as well as in cigarettes of other manufacturers.

Exporting countries are increasingly monitoring their export produce for traces of pesticides. Countries import tobacco only with acceptable levels of pesticide residues, though domestic rules dominate over the nascent *Codex Alimentarius* standards for pesticides. Many importing countries have established guidance residue levels (GRL) and maximum residue levels (MRL) for most of the pesticides used for tobacco. Such guidelines discourage the indiscriminate use of pesticides. Apart from the irrational use of pesticides, the use of banned pesticides or those not recommended for tobacco are closely monitored. For example, chlorinated hydrocarbons such as endrin, chlordane, aldrin and toxaphene remain in the environment for long periods after their use and tobacco plants may take up these pesticides from the soil, resulting in pesticide residues in cured leaves.[46]

Use of fertilizers

Tobacco is heavily dependent on fertilizers because it is grown in dry and semi-arid areas and needs to grow rapidly, often with irregular rainfall. With increased irrigation, mistimed fertilizer application causes excessive leaching, including that of nitrogen and potassium. Depending on the soil type, anywhere between 80 and 200 kg of chemical fertilizers are applied per acre before transplantation. Urea, diammonium phosphate and other chemical fertilizers are prescribed, and provided as a part of the subsidy to farmers by the State Governments and tobacco companies.

Crop rotation is a simple and logical method of retaining soil nutrition but is seldom practised. Globally, monocropping of tobacco is discouraged as it leads to development of pests and diseases in addition to decreasing soil fertility. Yet, most of the tobacco crop produced is from monocrop fields. Crop rotation not only gives additional returns to farmers but also maintains the fertility and health of the soil. For different types of tobacco, suitable crop rotations have been worked out without jeopardizing the tobacco quality. One-year and two-year rotations, long-term cropping sequences, mixed cropping wherever feasible and cropping systems were developed to suit a particular region.

In India, for *kharif*, black gram, dry paddy, groundnut, gingelly, maize or pearl millet are recommended when tobacco is planted in the *rabi* season. The temptation for farmers to continue with tobacco is immense, though the Tobacco Board and local extension workers advise against two successive seasons of planting. Despite CTRI claims and the push for protocols for green manure and use of integrated pest management, tobacco companies encourage farmers to use more chemical fertilizers and pesticides. Biopesticides (microorganisms or products obtained from microorganisms which are lethal to insect pests, such as *Bacillus thuringiensis* var. *kurstaki*) are seldom used.[24]

Social costs of tobacco cultivation

In Africa, fewer children of tobacco growers attend school compared with children from families who do not grow tobacco. They also start going to primary school at a later age. Even when the school fees are paid, children are kept at home during periods of peak activity in the tobacco fields. A company in Malawi in its promotion posters announced that the 'riches and the bounty of the harvest will be so large that your children will be rich anyway'. Child labour is not unique to tobacco. In conditions of poverty, other crops also make use of child labour. But tobacco's longer growing season and the curing process seem to place a particular strain on children's health.

In India, according to a report by an advocacy group, Global March Against Child Labor, New Delhi, an estimated 20,000 children work in tobacco farms and another 27,000 children work in *beedi*-making or packing cigarettes.[47] Tobacco engages the land for a longer period than other crops, and utilizes labour-intensive practices, irrespective of the farm size. This is also reflected in the high rates of absenteeism from school seen during the tobacco planting, harvesting and

curing seasons.[47] Child labour and hired labour exploitation was also rampant.[47] Tobacco also gave low returns when compared in terms of net returns, based on the high doses of pesticides and chemical fertilizers needed for its cultivation.

Women, in particular, carry the heaviest burden of small-holder tobacco growing in developing countries. In addition to carrying out farming-related tasks, they have to collect wood for the barns as well as for domestic use. As fuelwood and water supply run out, they need to travel further to collect water. Meals become irregular and sparse during the busiest months. Vegetable gardens and markets are neglected, as a result of which households depend on the sale of crops to procure food.

5.2 ECOLOGICAL AND ENVIRONMENTAL EFFECTS OF TOBACCO USE

KEY MESSAGES

- Tobacco contributes to deforestation in three ways: forests cleared for cultivation of tobacco, fuelwood stripped from forests for curing and forest resources used for packaging of tobacco, tobacco leaves, cigarettes, etc.
- Tobacco growing depletes soil nutrients at a much faster rate than many other crops, thus rapidly decreasing the fertility of the soil.
- Tobacco displaces the indigeneous flora and fauna and will thus gradually become a source of pests for other crops. It induces collapse of the food web, thereby destabilizing the predator–prey relationship.
- Tobacco requires huge chemical inputs. Such chemicals may run off into water bodies, contaminating local water supplies. High levels of pesticide use may also lead to the development of resistance in mosquitoes and flies.
- Frequent contact with and spraying of chemicals, and storage of tobacco in residential premises of farmers have adverse health effects.
- Tobacco is heavily dependent on fertilizers. With increased irrigation, mistimed fertilizer application causes excessive leaching, including that of nitrogen and potassium.
- In India, an estimated 20,000 children work in tobacco farms and another 27,000 work in *beedi*-making or packing cigarettes.

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5.1 Health care costs

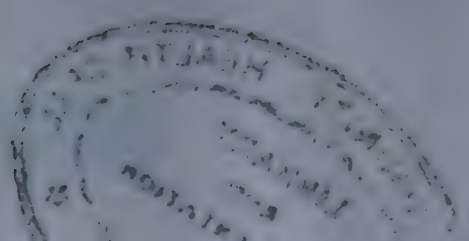
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6

Battle for Tobacco Control—The Indian Experience

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Just a decade ago, it would have been inconceivable for an objective observer to imagine that India, in 2003, would be acclaimed as a leader in global tobacco control efforts. Given the fact that India is the second-largest producer of tobacco and had previously valued the revenue- and employment-generating potential of tobacco agriculture and manufacture, it would have been natural to expect that policy-makers would continue to be lukewarm towards national or global efforts to curb tobacco consumption.

Yet, the reality of 2003–2004 is that the Indian Parliament enacted a far-reaching anti-tobacco legislation in April 2003, the Indian Government played a prominent role in the Framework Convention on Tobacco Control (FCTC) negotiations (which concluded in March 2003), signed the FCTC in September 2003, ratified it in February 2004 and commenced enforcement of the national tobacco control law in May 2004. Both at home and abroad, Indian state and civil society organizations are now demonstrating a steely resolve to contain the menace of tobacco through a comprehensive control strategy that combines several demand and supply reduction measures.

How did this transformation come about? Many factors have cumulatively contributed to the emergence of this national consensus on tobacco control. These include: increasing awareness of the health, environmental and developmental

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damages caused by tobacco; growing global support for tobacco control; WHO's catalytic role in developing policies and programmes for effective action; vigorous advocacy by civil society groups in India; and decisive interventions by the Indian judiciary.

This chapter aims to describe the critical processes and products related to tobacco control policies and programmes in India. The evolution of legislative and regulatory measures, over the past half-century, as well as their current status, are profiled. The key provisions of these measures and their implications for India are discussed. The seminal role of public interest litigation and judicial verdicts is elucidated, and consumer actions to challenge the tobacco industry are illustrated.

Fiscal measures, taken by the government both to tax tobacco and to foster its growth, are elaborated to exemplify the quintessential dilemma that a developing country faces when dealing with the threats and temptations of tobacco. The role of civil society, as a conscience keeper that guides government as well as the public to make the right choices, is portrayed and the array of activities undertaken by Indian NGOs are profiled. The efforts of several governmental and non-governmental agencies, to promote health education through the mass media, are summarized. The tactics adopted by the tobacco industry in India to obfuscate the truth and dilute or subvert control measures are also catalogued.

This narrative, by its very nature, takes a descriptive form. Evaluation has not been a strong component of programme implementation in the area of tobacco control in India, since the programmes themselves have been sporadic and limited till recently. The coalescence of multiple initiatives into a nationwide programme now appears more likely. The manner in which the Indian experience gathered so far (des-cribed in Chapter 6) and the lessons of international experience available from other countries (Chapter 7) should be combined to generate action pathways for the future will be discussed in the subsequent chapters of this report (Chapters 8 and 9).

6.1

Legislation and Enforcement

Legislation lies at the very heart of any effective tobacco control programme. It serves to institutionalize the programme by providing it with a legal foundation. It also helps to integrate the diverse components of a multifaceted programme. In a situation where governments, officials and, consequently, policy priorities change over time, legislation ensures continuity and retains a steady focus on sustained and concerted efforts, as opposed to sporadic interventions by the Ministry of Health or other government agencies.

Beyond the specific legal provisions, legislation achieves two other broad social objectives. First, it is a means of raising awareness and a means of social mobilization. For example, the mere presence of provisions such as a ban on smoking in public places or sale to minors educates the public about the harm caused by tobacco. The enactment and implementation of legislation helps to raise public awareness and builds popular consensus for pro-public health measures. Second, legislation is seen, more fundamentally, as the most solemn expression and formal articulation of societal values; 'they recognize, reinforce and make more permanent the society's important norms."[1]

Thus the role of legislation is to

- put minimum public health measures in place;
- establish and define mechanisms for protection of rights; and
- promote social awareness as a vehicle of social change.

Legislation for tobacco control started evolving in India in the mid-1970s. This was in response to increasing scientific evidence of tobacco being a major cause of mortality and morbidity in the world, growing awareness of the adverse health effects of tobacco consumption in India and rising demands for tobacco control elsewhere in the world.

Laws related to tobacco: Conflicting signals in the 1970s

In 1975, the Government of India enacted the Cigarettes (Regulation of Production, Supply and Distribution) Act (The Cigarettes Act, 1975)[2] that made it mandatory to display a statutory health warning on all packages and advertisements of cigarettes. This Act was passed to provide certain restrictions related to the trade and commerce in, and production, supply and distribution of, cigarettes. The statement of objectives and reasons, in the Act, clearly stated, *inter alia:*

'Smoking of cigarettes is a harmful habit, and in the course of time, can lead to grave health hazards. Researches carried out in various parts of the world have confirmed that there is a relationship between smoking of cigarettes and lung cancer. Chronic bronchitis, certain diseases of the heart and the arteries, cancer of the bladder, prostrate, mouth, pharynx and oesophagus, peptic ulcer, etc. are also reported to be among the ill effects of cigarette smoking.'

The Act required the manufacturers or persons trading in cigarettes to display a statutory warning that 'Cigarette smoking is injurious to health' on all cartons and packages of cigarettes. A similar warning was also required to be displayed in advertisements of cigarettes. The purpose of this warning was mainly to inform citizens of the harmful effects of smoking so that the demand for cigarettes would be reduced.

Section 3 of the Act specifically laid down restrictions relating to trade and commerce in tobacco. This section made it obligatory for a person who engages in the trade of production,

distribution and supply of cigarettes, to ensure that every package so produced, supplied or distributed by him should bear the specified warning. Section 4 described the manner in which the warning should be presented, namely, the style and type of lettering which has to be legible, prominent and bold, so that it is clearly visible to the buyer. Similarly, Sections 6 and 7 prescribed, respectively, the language in which the warning shall be expressed and the size of the letters. In addition, there were other sections in the Act that addressed the power of entry and search (Section 8), confiscation of packages (Section 10) and liability to pay penalty in the event of not abiding by the provisions of the Act (Section 12).

The Cigarettes Act, 1975, however, failed to accomplish much because it was not comprehensive in its coverage and was feeble in its provisions. The warning specified under the Act was far too mild to be an effective deterrent. Moreover the Act did not include in its purview non-cigarette tobacco products such as *beedis*, *cheroots*, *gutka* and cigars. This Act was repealed with the passage of the new Act in 2003.

In 1975, the Government of India, under the aegis of the Ministry of Commerce, constituted the Tobacco Board to research, market and develop the tobacco crop and trade. This was done through the enactment of the Tobacco Board Act, which is in force till date. The Tobacco Board develops better varieties of seeds, runs seed banks and liaises with financial institutions to secure loans for farmers. It sets up and monitors trade in tobacco leaf at the selling platforms and ensures that tobacco farmers get fair prices. It also recommends support prices of tobacco crops to prop up the produce of farmers.

The rationale presented by the government for enacting this legislation was as follows: India is the third largest producer of tobacco in the world with an average annual production of 350 million kg, and sixth among the tobacco exporting countries with an average annual export of about 55 million kg. Virginia tobacco is the most important variety grown in the country and India is the second largest exporter of this variety in the world. To effectively regulate the tobacco industry, particularly the Virginia tobacco industry, it was proposed that the development of the tobacco industry should be under the control of the Central Government and it was further proposed that for the said purpose a board called the Tobacco Board should be established and that the board would be vested with adequate powers to deal with this industry.

Thus in the 'public interest', thinking it expedient to keep this industry under the control of the Central Government, this Act was passed. The Act aimed at planning the production of tobacco, particularly Virginia tobacco, to suit the specified needs of the market by ensuring the requisite standards of quality and to minimize the fluctuations in production and prices. The Act further aimed at facilitating research, marketing, warehousing, publicity and promotion abroad, and extension of market intelligence in competing countries. Thus, the Act focused on establishing a single authority which could deal with various aspects of this industry in an integrated and efficient manner.

The Tobacco Board Act, 1975, contains regulatory sections such as Section 10 that deals with the registration of growers of Virginia tobacco, whereby the grant or refusal of the certificate of registration would depend upon the demand for Virginia tobacco in India and abroad. Sections 10a, 11, 11a, 11b and 12 deal with other kinds of registration, namely, registration of growers of Virginia tobacco seedlings for commercial purposes, registration of curers of Virginia tobacco, registration of processors and manufacturers of Virginia tobacco, etc., licences to be obtained for grading work and construction of barns, registration of exporters, packers, auctioneers and dealers, respectively. Section 13 of the Act specifies that no registered grower or curer of tobacco shall sell Virginia tobacco elsewhere, other than at the auction platform registered with the Board.

Section 13B of the Act casts a duty on the buyers of the Virginia tobacco to refrain from unfair practices specified therein.

There was, therefore, a contradictory public policy in operation. On the one hand, there was an attempt to discourage smoking. On the other, tobacco itself was seen as a major source of public revenue. The Tobacco Board Act of 1975, however, had an unintended future benefit. The Act brought tobacco under a single jurisdiction (the Central Government). This fact was later utilized by the Parliamentary Standing Committee on Human Resource Development, to expand the provisions of the Tobacco Control Bill of 2003 to encompass all tobacco products, whether under Central or State jurisdiction. The argument that the Centre could extend its control of tobacco in 'public interest' was made in 1975 to favour tobacco production but was turned around in 2003 to enact measures intended to reduce tobacco consumption. By doing so, public interest was now truly served!

Pressure for stronger action and comprehensive legislation

During the 1980s and 1990s, the public and environment policy moved towards stronger tobacco control measures due to a confluence of several factors. There was better quantification of the health risks posed by tobacco as well as an increasing list of diseases linked to its use. International organizations, such as WHO, recommended stronger action for tobacco control at the national level. Many developed countries progressively adopted stricter regulatory measures for tobacco control in response to both the enhanced scientific knowledge and energetic civil society activism. Even in India, civil society groups and the media began to play a stronger role in increasing public awareness of tobacco-related health issues. Tobacco control began to feature in civil litigations and the courts started ruling in favour of tobacco control measures. Demands for tobacco control were also made with increasing frequency in the Indian Parliament, and law-makers started responding to the information about the dangers that tobacco posed to India. All of these combined to mount pressure on the Central and State Governments to impose further restrictions on tobacco trade and to bring forth a comprehensive legislation for tobacco control.

The issue of tobacco use and its ill-effects received greater international attention during this period than in the past. The World Health Assembly of WHO, in its annual resolutions of 1986 and 1990, urged Member States to (i) ensure effective protection to non-smokers from involuntary exposure to tobacco smoke, (ii) protect children and young people from being addicted to the use of tobacco, (iii) consider legislation and other effective measures for protecting their citizens, with special attention to risk groups such as pregnant women and children, from involuntary exposure to tobacco smoke, (iv) discourage the use of tobacco and impose progressive restrictions on tobacco products, and (v) take concerted action to eventually eliminate all direct and indirect advertising, promotion and sponsorship concerning tobacco.[3]

The role played by civil society is described in greater detail in Section 6.4. While individual organizations engaged in the advocacy of tobacco control with increasing vigour and visibility, their collective role was particularly effective in shaping the recommendations of the regional and national consultations on 'Tobacco or Health', which were jointly convened by the Government of India (Ministry of Health) and WHO in 1991. Two preliminary regional consultations were held at Bangalore and Kolkata. A national consultation was then organized at New Delhi. Each of these brought together multiple stakeholder groups (policy-makers, health professionals, economists, lawyers and judges, health and development NGOs, educators, tobacco farmers, trade unions and the tobacco industry). While the tobacco industry and its allies stubbornly denied any link between tobacco and disease, and warned of dire economic consequences that would result

Box 6.1 Recommendations of the National Conference on Tobacco or Health (July 1991)

- A National Tobacco Control Commission (NTCC) should be established to coordinate all tobacco-related activities. The NTCC should be established as a parliamentary committee and present its annual report to Parliament.
- Tobacco should be brought into the concurrent list to enable the Government of India and the State Governments to enact appropriate legislation.
- A comprehensive tobacco act should be brought to encompass all legislations in relation to tobacco promotion, sale, consumption, labelling, warnings, etc.
- A separate legislation should be targeted at compulsory compensatory reforestation to make up for the loss of forests and flue-curing of tobacco. A separate tax could be levied and the money obtained could be utilized for reforestation.
- The NTCC should set up laboratories for testing the nicotine and tar content of beedis and cigarettes, provide incentives to farmers to change to an alternative crop, rehabilitate those persons who will lose employment due to control of tobacco and give income tax exemption to money donated for anti-tobacco campaigns.
- A committee should be formed to go into the details of the economics of tobacco.
- Health education strategies should be carefully formulated. The messages should be such that they can reach the illiterate as well. A committee should be set up to formulate the health education strategy.
- The major emphasis of education should be on children and adolescents who are potential future addicts of tobacco, to prevent their becoming addicts.
- Health education should be part of the curriculum for schoolchildren as well as for the teachers' training course (BEd). A specific programme of health education that includes a component on tobacco should be developed for both groups.
- As all medical colleges adopt a rural area for field training of medical students and interns, health education, including that about tobacco, should be an essential component of community medicine.
- Youth groups such as the National Service Scheme (NSS), Nehru Yuvak Kendra (NYK) and Scouts should be utilized for community education regarding the dangers of tobacco use.
- October 11 should be declared as the 'National No-Tobacco Day'.
- Incentives should be provided to non-users of tobacco for employment in the armed forces and police.
- Non-users of tobacco should pay a lower insurance premium compared to tobacco users.
- Incentives should be provided to farmers to change to alternative crops.
- The Board of Film Certification, the motion picture censor board, should restrict/remove scenes showing the use of tobacco.
- Financial holdings of the government in the tobacco industry should be withdrawn.
- Priority research areas regarding tobacco should receive the attention of research funding agencies to ensure work in the following areas: (i) health education; (ii) tobacco agriculture; (iii) tobacco economics; (iv) public policy; (v) health hazards; (vi) behavioural aspects of starting tobacco use; (vii) methods for promoting quitting of tobacco through methods such as yoga, group activities, etc.

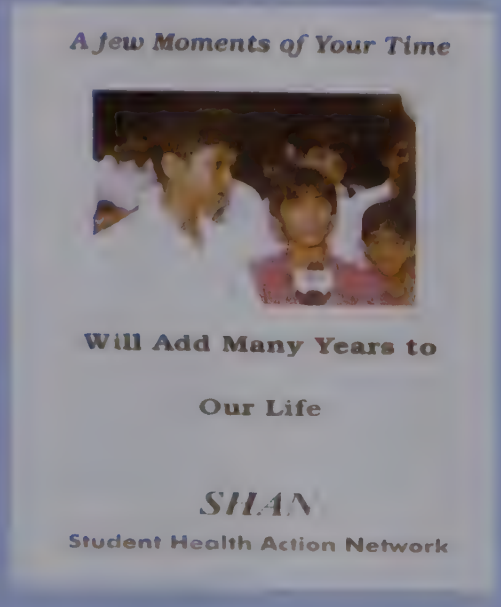
'This Conference recognizes tobacco as a major health hazard and concludes that an integrated educational, legislative and agro-economic strategy with an operational framework and political, administrative, financial and research support, is needed to protect our people from the tobacco menace and move in the direction of a tobacco-free society.'

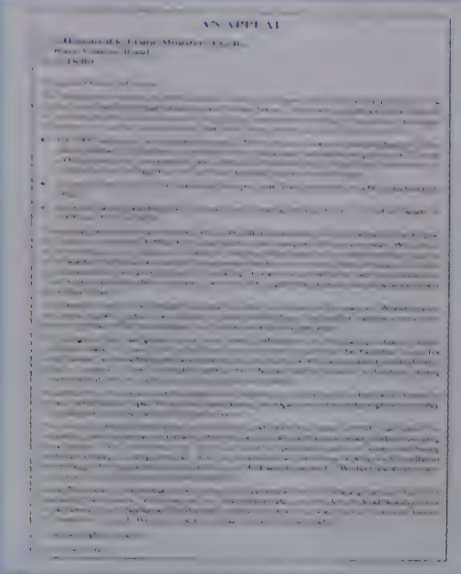
from any attempt at tobacco control, the other groups put together a strong case for the early initiation and effective implementation of a comprehensive tobacco control strategy (Box 6.1) The government accepted the recommendations on tobacco control and commenced work on developing a new legislation.

In the early 1990s, when the attempts by the government to develop a comprehensive legislation for tobacco control faced fierce opposition from the tobacco industry and the proposal was deferred through the appointment of a committee to evaluate the economic impact of tobacco control, civil society groups mounted strong advocacy campaigns to demand speedy enactment of new laws for tobacco control. Youth groups, in particular, were vocal in seeking intervention by senior policy-makers and parliamentarians to protecting the health of present and future generations (Box 6.2).

Judicial verdicts issued during this period also directed the government to initiate stronger

Box 6.2 School students appeal to Prime Minister and parliamentarians for tobacco control





This appeal, signed by over 25,000 school students of Delhi, was submitted by the representatives of the Student Health Action Network to the Prime Minister of India on 12 September 1998. They urged the Prime Minister to initiate measures to usher in a tobacco-free society and to start that process by imposing a comprehensive ban on all forms of tobacco advertising. They also suggested that 'world leaders who have signed global conventions to ban chemical and biological weapons must also launch a global effort to eliminate the modern world's biggest killer'. The appeal was later circulated, as a pamphlet (above) to members of the Indian Parliament.

Website: www.hriday-shan.org

measures for tobacco control. While the nature and results of litigation in tobacco control are detailed in Section 6.3 of this report, the most important judgments were pronounced regarding public smoking. Initially, the High Court of Kerala and later the Supreme Court of India called for effective bans on smoking in public places and affirmed the rights of non-smokers to breathe air free from tobacco smoke. They directed the government to institute regulatory measures to confer such protection to non-smokers.

Regulatory actions taken by the Central Government

- To protect the non-smoking public from the hazards of second-hand smoking, the Central Government issued a directive on 7 May 1990, through the Cabinet Secretariat, prohibiting tobacco smoking in a few selected places where a large number of persons were expected to be present for prolonged periods. These places were hospitals, dispensaries and other health care establishments, educational institutions, conference rooms, domestic air flights, air-conditioned chair cars and air-conditioned sleeper coaches in trains, suburban trains and air-conditioned buses. Further, it was directed that no ashtrays be placed in such non-smoking areas and that all cigarette shops be removed from the compound of such buildings. Necessary billboards, clearly indicating that smoking was strictly prohibited, were required to be displayed at such places.[4]
- Direct tobacco-related advertisements were prohibited on Doordarshan (national television channel) and All India Radio, which are state-controlled agencies.
- State governments were advised by the Central Government to discourage the sale of tobacco products around educational institutions.
- Recognizing the health hazards of the habit of chewing tobacco, which was becoming increasingly prevalent in the country, the Central Government made it mandatory to display a statutory warning on chewing tobacco products stating that 'chewing of

Box 6.3 From Parliamentary proceedings: Smoking in films

(Lok Sabha, Unstarred Question No. 4065, 10 April 2003)

The Central Board of Film Certification (CBFC) certifies films in terms of the provisions of the Cinematograph Act, 1952,[7] and the guidelines issued thereunder. The objectives of certification, as laid down in the guidelines, are as follows:

(i) The medium of film remains responsible and sensitive to the values and standards of society;
(ii) Artistic expression and creative freedom are not unduly curbed;
(iii) Certification is responsive to social change;
(iv) The medium of film provides clean and healthy entertainment; and
(v) As far as possible, the film is of aesthetic value and cinematically of a good standard.

The film certification guidelines already, inter alia, ask CBFC to ensure that scenes tending to encourage, justify or glamorize consumption of tobacco or smoking are not shown. CBFC has intimated that the above guidelines are adhered to in certifying films.

(Answered by the Minister of State in the Ministry of Information and Broadcasting)

Table 6.1 State-level laws for tobacco control

Place	Name of the law and year of enactment	Features
Delhi	The Delhi Prohibition of Smoking and Non-Smokers' Health Protection Act, 1996	Prohibition of: smoking in places of public work or use and in public service vehicles; advertisement of cigarettes, etc.; sale of cigarettes, etc. to minors; storage, sale and distribution of cigarettes, etc. in the vicinity (100 yards) of educational institutions Display and exhibition of a board saying 'No smoking zone' or 'Smoking is an offence'. Provision of penalties including ejection of violators of this Act, from the place of public work or use.
Assam	The Assam Prohibition of Smoking and Non-smokers' Health Protection Bill, 1999	Same as Delhi
Meghalaya	The Meghalaya Prohibition of Smoking and Non-Smokers' Health Protection Act, 1998	Same as Delhi
Sikkim	The Sikkim Prohibition of Smoking and Non-Smokers' Health Protection Bill, 1997	Same as Delhi
Jammu and Kashmir	The Jammu and Kashmir Prohibition of Smoking and Non-smokers' Health Protection in Public Service Vehicles Bill, 1997	Prohibition of: smoking in public service vehicles; advertisement of cigarettes, etc. Provision of penalties and ejection of violators from public service vehicle
West Bengal	The West Bengal Prohibition of Smoking and Spitting and Protection of Health of Non-smokers and Minors Bill, 2001	Prohibition of: smoking and spitting in places of public work or use and in public service vehicles; advertisement on smoking and chewing; sale of cigarettes, etc. to minors; storage, sale and distribution of cigarettes, etc. within an area of 100 metres around places of worship or educational institutions Provision of penalties and power to arrest without warrant
Goa	The Goa Prohibition of Smoking and Spitting Act, 1997	Same as West Bengal, excepting inclusion of the power to eject violators (instead of power to arrest without warrant)
Himachal Pradesh	The Himachal Pradesh Prohibition of Smoking and Non-smokers Health Protection Bill, 1997	Same as Delhi

tobacco is injurious to health'. Since chewed tobacco is treated as a food item under the Prevention of Food Adulteration Act of 1955, the provisions of that Act were utilized, in 1990, to prescribe this health warning.[5] In 1992, the Central Government banned the manufacture and sale of toothpastes and toothpowders containing tobacco under the Drugs and Cosmetics Act of 1940.[6]

- In December 1991, the Central Government directed the Board of Film Certification, under the Cinematograph Act of 1952, to ensure that scenes tending to encourage, justify or glamorize the consumption of tobacco or smoking are not shown (Box 6.3).[7]
- In September 2000, the Central Government prohibited, on cable television, advertisements which promoted directly or indirectly the production, sale or consumption of cigarettes and other tobacco products. This was done by amending the advertisement codes as provided in the Cable Television Networks (Regulation) Act of 1994. Offenders were liable to imprisonment, for a term which may extend to 2 years or a fine which may extend up to Rs 1000 or both, for the first offence. For every subsequent offence, imprisonment may extend up to 5 years and the fine may extend up to Rs 5000.[8]
- The Ministry of Railways took the important step of banning the sale of cigarettes and *beedis* on railway platforms and in passenger trains from 5 June 1999 (Box 6.4).[9]
- Again, on 4 July 2001, keeping in view the interests of maintaining cleanliness on railway premises and protecting public health, the railway authorities banned the sale of *gutka* on railway station premises, concourses and reservation centres, and in trains.[10]

Box 6.4 From Parliamentary proceedings: Smoking on railway platforms

(Lok Sabha, Unstarred Question No.3097, 13 December 2003)

Efforts are being made to ensure enforcement of ban on smoking on railway platforms and in trains in compliance with order of the Supreme Court of India.

Ministry of Railways has issued orders prohibiting sale of beedis/cigarettes etc. with effect from 5th June, 1999, by the catering vending units at all railway premises, stations and in running trains on Indian Railways. In addition to beedis/ cigarettes, sale of all tobacco products including Gutkhas, etc. containing tobacco has also been banned for sale on railway platforms with effect from 4.7.2001.

(Answered by the Minister of State in the Ministry of Parliamentary Affairs and the Ministry of Railways)

Legislative and regulatory actions taken by State Governments

Even as the Central Government was contemplating fresh legislation for comprehensive tobacco control, some State Governments moved ahead with State laws addressing specific components of that strategy. These laws are profiled in Table 6.1.

Several states used the provisions of the Prevention of Food Adulteration Act to impose a ban on smokeless tobacco.

Tamil Nadu

According to the notification issued by the Director of Public Health and Preventive Medicine and State Food (Health) Authority, '...no person shall himself or by any person on his behalf, manufacture for sale or store, sell or distribute chewing tobacco, *paan masala* or *gutka* containing tobacco in any form or any other ingredients injurious to health, under whatever name or description it is sold in the State of Tamil Nadu, in the interest of public health, for a period of five years with effect on and from 19th November 2001'.

Andhra Pradesh

A notification, dated 23 July 2001, '...prohibits, in the interest of public health, the sale of all brands of *paan masala* (containing tobacco) and chewing tobacco/*zarda*/*khaini* under any brand

name, in the entire State of Andhra Pradesh with immediate effect'.

Maharashtra

The order states that the authorities '...in the interest of public health, prohibit for a period of five years with effect from the 1st August 2002, the sale of *Gutka* and *paan Masala* containing tobacco or not containing tobacco, by whatever name called, in the State of Maharashtra; and accordingly direct that no person shall himself or any person on his behalf, shall manufacture for sale, or store, sell or distribute *Gutka* or *paan Masala* containing tobacco or not containing tobacco, by whatever name called, for a period of five years with effect from the 1st August 2002'.

Goa

The order states that the authorities '...in the interest of public health, prohibit with effect from the 26th January 2003, the sale of *Gutka* and *paan masala*, containing tobacco or not containing tobacco, by whatever name called, in the State of Goa; and accordingly direct that no person shall himself or any person on his behalf, shall manufacture for sale, or store, sell or distribute *Gutka* or *paan masala*, containing tobacco or not containing tobacco, by whatever name called, until further orders'.

Bihar

In a notification dated 31 March 2003, the State Government '...directs that no person shall himself or by any person on his behalf, shall manufacture for sale or store, sell or distribute *Gutka* or *paan Masala* containing tobacco or not containing tobacco, or by whatever name called, for a period of five years with effect from April 1, 2003'.

The tobacco industry segment, which manufactures and markets smokeless tobacco products in India, challenged some of these orders in the courts of law (*see* Section 6.3).

Genesis of the Indian Tobacco Control Legislation of 2003

The tobacco control legislation entitled, 'The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003' is a result of more than a decade of consultation and has undergone many changes to assume its final form. In September 1993 the Central Cabinet approved, in principle, the need for such an Act. It was decided at that time to enact a comprehensive legislation covering all tobacco products including cigarettes. However, this faced the barrier of different tobacco products being under the separate legislative purview of the Central and State Governments, in the federal structure of India's governance. Since cigarettes are in the Concurrent List and other tobacco products are in the State List, resolutions from at least two States Legislatures were required to make a law covering other tobacco products. The States of Goa, West Bengal, Uttar Pradesh and Punjab passed resolutions in their legislatures authorizing Parliament to come out with a comprehensive legislation.

In February 1995, the Parliamentary Committee on Subordinate Legislation of the Tenth Lok Sabha proposed to examine the rules and regulations framed under the Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975. In the 22nd Report of the Committee on Subordinate Legislation, which was presented to the House on 22 December 1995, a series of substantive suggestions were made for measures to achieve better results in the field of tobacco control. These suggestions are summarized below:[11]

1. Statutory warnings should contain strong words such as 'smoking kills' or 'smoking causes lung cancer'. The warning should be rotated periodically on cigarette packets.
2. Health warnings should be made effective by using symbols and pictorial depictions.

Such pictures should be depicted as a supplement to the strongly worded rotating health warnings.

3. Health warnings should be extended to cover *beedis*, cigars, *cheroots*, all tobacco products such as *paan masala*, toothpaste, toothpowder, *gutka*, cut tobacco, chewing tobacco, snuff tobacco, etc.
4. Health warnings should also be printed in regional languages in addition to the existing practice of these being only in English.
5. The size of the health warnings should be as large as the brand name of the tobacco products and the warning should be prominently displayed on both sides of the package.
6. Printing the tar and nicotine levels on the packets and cartons of all tobacco products, and fixing the maximum permissible limits on the use of these toxic substances in cigarettes/*beedis* and other harmful tobacco products should be made compulsory.
7. Single cigarettes should also contain the health warning either in written form or as a symbol such as skull and crossbones or any other suitable depiction.
8. Health warnings should be displayed prominently at every shop where cigarettes, *beedis* or other tobacco products are sold. These warnings should be in the respective regional languages and their display should be made compulsory under the law.
9. Health warnings must indicate the message that the 'use of tobacco smoking is habit forming'.
10. Cigarettes and other tobacco products imported to India must meet the statutory requirements of the country regarding health warnings.
11. There should be a total ban on all forms of advertisement which promote the use of tobacco.
12. The government should make stringent penal provisions to effectively deal with violation of the provisions of the law.
13. There should be a total ban on the sponsoring of major sports/cultural events by cigarette and other tobacco product companies.
14. There should be a complete ban on smoking in the public transport system, domestic air flights and government vehicles.
15. People should be informed that not only smokers but second-hand smokers are also affected by cigarette smoking.
16. Anti-tobacco education should be made compulsory in schools and colleges. Teachers should not smoke within the school premises so that students are not encouraged to smoke or emulate smokers.
17. Sale of cigarettes to persons below 18 years of age should not be permitted.
18. Scenes in films, plays and advertisements on television glamorizing smoking should not be shown. The government should allocate adequate resources and personnel to carry out anti-smoking education.
19. Initiatives may be taken by the Ministry of Agriculture to persuade farmers to switch over to alternative crops and raise the level of awareness of the health hazards involved in the use of tobacco through proper education.
20. The Indian Council of Agricultural Research should concentrate on research for developing new technology, high-yielding varieties, fertilizers, etc. for alternative crops.
21. Adequate research should be done to use tobacco leaves as an alternative source of protein. There is no objection to the production of tobacco for export purposes but the Tobacco Board should not promote the use of tobacco consumption internally.
22. The government should conduct a study about the resources required for rehabilitating tobacco workers and the areas of alternative employment in which they could be absorbed.

To consider the recommendations made by the Committee on Subordinate Legislation, a coordination committee was formed by the

Central Government in 1995, which included representatives from the Central Ministries of Commerce, Agriculture, Labour, and Information and Broadcasting, the Indian Council of Medical Research, and the National Council of Educational Research and Training. While most of the ministries agreed with the recommendations of the Committee on Subordinate Legislation, the Ministry of Labour was of the opinion that the adverse impact of such legislation on the livelihood of the labour force involved in tobacco production, processing and marketing could not be ignored.

In 1995, an Expert Committee on the Economics of Tobacco Use was constituted by the Central Ministry of Health. The terms of reference of the Committee were, on the one hand, to make a comparative study of tax revenue, foreign exchange, employment and consumer expenditure and, on the other, of expensive tertiary-level medical facilities involving even imported equipment for the treatment of tobacco-related diseases, losses due to fire hazards, ecological damage due to deforestation and disposal of tobacco-related waste. The Committee also consisted of representatives of tobacco farmers' associations, trade unions, and tobacco workers and employees' federations. After the Committee commenced its work, the tobacco industry utilized its political influence to have the Committee reconstituted, increasing the quantum of representation for the tobacco industry and its allies. Though there was no clear consensus on the issues, due to dissent by the tobacco industry, the main conclusions arrived at by the Committee in February 2001 were as follows:[12]

1. Tobacco is clearly a demerit good and the public health effects of tobacco use constitute the single most important aspect of the economics of tobacco use,
2. The 'indirect macro-economic, secondary benefits' of tobacco use are easily outweighed by the costs of the three major diseases associated with tobacco,
3. The prevalence rate of tobacco use is greater among the poor than the affluent, and
4. The use of tobacco leads to a number of adverse short- and long-term consequences.

On the basis of the suggestions made by the Parliamentary Committee on Subordinate Legislation, the Union Ministry of Health and Family Welfare introduced the Tobacco Control Bill in the Rajya Sabha (Upper House of Indian Parliament) on 7 March 2001, after obtaining the approval of the Central Cabinet on 6 February 2001.[13] On 12 April 2001, the Bill was referred to the Parliamentary Standing Committee on Human Resource Development. The Committee held eight sittings in all, to consider and finalize its report on the Bill. Since the Bill had wider ramifications and was not solely concerned with the Health Ministry, the Committee decided to invite memoranda from individuals/organizations/institutions, etc. interested in the subject matter of the Bill. For this purpose, an advertisement was issued in almost all the leading newspapers of the country and wide publicity was given through Doordarshan and All India Radio. The Committee received 55 memoranda and representatives of a number of associations, trade unions, NGOs and former Members of Parliament appeared before the Committee. Several ministries and government departments, besides the Department of Health, were also invited to present their views.

In its report, submitted on 5 December 2001, the Committee noted that 'when Parliament is competent to legislate on cigarettes, it should be equally competent to legislate on matters relating to other tobacco products, both being health hazards'. It pointed out that the proposed legislation seemed to be discriminatory in nature because of its restricted applicability with regard to other tobacco products when compared with cigarettes. It referred to Section 2 of the Tobacco Board Act of 1975, which reads 'It is hereby declared that it is expedient in the public interest that the Union should take under its control the tobacco industry' and to the Supreme Court judgment in the case of ITC and Others versus State of Karnataka and others 1985 (Supp) SCC

476, wherein the Supreme Court has ruled that the entire tobacco industry stands under the control of the Union (Central Government), as a consequence of the Tobacco Board Act of 1975.

The Parliamentary Standing Committee recommended that the Bill should apply to the whole of India, both for cigarettes as well as other tobacco products, by reframing the Preamble and inserting a declaration to the effect that the Union Government may take under its control the tobacco industry. Other recommendations of the committee included:[14]

- Banning the sale of cigarettes and other tobacco products within a radius of 500 yards of educational institutions;
- Mandatory pictorial depiction of warnings such as skull and crossbones on packages of cigarettes and other tobacco products;
- Mandatory printing of nicotine and tar contents as well as maximum permissible limits on packets and cartons of all tobacco products;
- Railway waiting rooms to be included under the definition of public place;
- There should not be any provision for arrest without a proper warrant;
- Provision of smoking areas in hotels, restaurants, airports, etc.; and
- Harmonization of excessive penalties and different penalties for producers or manufacturers and sellers of cigarettes and other tobacco products.

The National Human Rights Commission of India (NHRC) also stepped in to advocate tobacco control as an essential measure to promote human rights. In April 2001, the NHRC convened a South-East Asia Regional Consultation on 'Public Health and Human Rights' at New Delhi, in collaboration with the Ministry of Health and Family Welfare, Government of India and the WHO. The consultation discussed at length the issue of unregulated tobacco promotion and use affecting the right to health, right to clean air, rights of children, right to information and education, right to redressal and right to tobacco control programmes/ facilities for citizens. The NHRC made the following recommendations:[15]

1. A comprehensive national tobacco control policy should be evolved at the highest level in consultation with all the stakeholders in public health;
2. A multisectoral national-level nodal agency should be established for tobacco control with strong representation from the legal, medical and scientific communities;
3. The right of the people to access correct information related to the effects of tobacco consumption must be promoted through programmes of information, education and communication;
4. Assistance must be provided for smoking cessation within the health care services; and
5. Various incentives provided to the tobacco industry must be discontinued.

Around the same time, the Supreme Court of India, while considering a public interest litigation, passed orders prohibiting smoking in public places throughout the country. The relevant extracts of the judgment delivered on 2 November 2001 are as follows:[16]

'Fundamental right guaranteed under Article 21 of the Constitution of India, *inter alia*, provides that none shall be deprived of his life without due process of law. Then why a non-smoker should be afflicted by various diseases including lung cancer or of heart, only because he is required to go to public places? Is it not indirectly depriving of his life without any process of law? The answer is obviously 'yes'. Undisputedly smoking is injurious to health and may affect the health of smokers but there is no reason that health of passive smokers should also be injuriously affected. In any case, there is no reason to compel non-smokers to be helpless victims of air pollution.'

'Learned Attorney General of India submits and all the counsels appearing for the other parties agree that considering the adverse effects of smoking in public places, it would be in the interest of the citizens to prohibit smoking in

public places till the statutory provision is made and implemented by the legislative enactment. The persons not indulging in smoking cannot be compelled to or subjected to passive smoking on account of acts of the smokers.'

'Realizing the gravity of the situation and considering the adverse effect of smoking on smokers and passive smokers, we direct and prohibit smoking in public places and issue directions to the Union of India, State Governments as well as the Union Territories to take effective steps to ensure prohibiting smoking in public places namely:

i. Auditoria
ii. Hospital Buildings
iii. Health Institutions
iv. Educational Institutions
v. Libraries
vi. Court Buildings
vii. Public Offices, and
viii. Public Conveyances including Railways.'

The judgment of the Supreme Court of India added impetus to the efforts being made by the Health Ministry to expedite the passage of the Tobacco Control Bill through Parliament of India. The recommendations of the Parliamentary Standing Committee were considered by the Union Cabinet on 19 February 2003. The Cabinet approved all the recommendations, with modification that the proposed ban on the sale of tobacco products may be within a radius of 100 yards (not 500 yards) of educational institutions. Accordingly, the proposed amendments to the Tobacco Control Bill, which was pending in the Rajya Sabha, were taken up for consideration on 9 April, 2003 and were passed on the same day. Subsequently, the Lok Sabha (the lower house of the Indian Parliament) also passed the Bill and it became an Act of Parliament after receiving the assent of the President on 18 May 2003.

Cigarettes and Other Tobacco Products Act, 2003[17]

The above law, intended to protect and improve public health, encompasses a wide array of evidence-based strategies to reduce tobacco consumption. Some of the key provisions of the legislation, along with penalties to violators, are listed in Table 6.2.

This legislation brings the entire range of tobacco products under the jurisdiction of the Central Government for the purpose of this Act. It is enforceable across all states and union territories, and for all tobacco products, including cigarettes, cigars, *cheroots*, *beedis*, cigarette tobacco, pipe tobacco, *hookah* tobacco, chewing tobacco, *gutka*, tobacco toothpowder, *paan masala* or any chewing material having tobacco as one of the ingredients (by whatever name it may be called).

Measures for implementation

Strategies for implementing of the various provisions under the law are as follows:

Smoking regulations

Individual smokers are restrained from smoking in places where the law does not permit it. The rules under the Act further require owners, managers of public places, hotels and restaurants to display prohibitory signs. In the case of hotels and restaurants, the owner or manager is further responsible for ensuring the segregation of smoking and non-smoking areas with corresponding indicators displayed, in a manner that the public does not have to enter the smoking area to reach the non-smoking area.

Ban on tobacco advertising

Persons engaged in the production, supply and distribution of tobacco products along with those having control over the media and those likely to take part in advertisements are responsible for ensuring that the ban is upheld.

Ban on sales to minors

No person is allowed to sell tobacco products to minors or within a radius of 100 yards of educational institutions.

Table 6.2 Key provisions and penalties of the Cigarettes and Other Tobacco Products Act, 2003

Provisions	Penalties
Prohibition on direct and indirect advertisements of tobacco products, with the exception of advertising at the points of sale and on tobacco packs. The rules under the law restrict point-of-sale advertising in terms of size, inclusion of a mandatory warning and disallowing the use of any pictures or messages other than the name and picture of the product itself Ban on gifts, prizes, scholarships or sponsorship of sports or other cultural events using the trademark or brand names of tobacco products	Advertisement is to be forfeited and disposed of. The first conviction is punishable with imprisonment of up to 2 years or a fine of up to Rs 1000, or both. Subsequent convictions are punishable with imprisonment of up to 5 years and a fine of up to Rs 5000.
Prohibition of smoking in public places (*see* Box 6.5)	Offences would be made compoundable with a fine of up to Rs 200.
Prohibition on the sale of tobacco products to persons below the age of 18 years Prohibition on the sale of tobacco within a radius of 100 yards of educational institutions	Offences would be compoundable with summary trials and a fine of up to Rs 200.
Legible and conspicuous display of health warnings including pictorial warnings (skull and crossbones and others as may be prescribed) on not less than one of the largest panels of the tobacco package with the text of the warning appearing in the same language(s) as the language(s) used on it. Indication of the tar and nicotine contents of the tobacco products on the package along with the maximum permissible limits as prescribed by the rules under this Act	Imprisonment of up to 2 years or a fine of up to Rs 5000, or both, for first conviction of a producer or manufacturer; subsequent convictions attract imprisonment of up to 5 years and with a fine of up to Rs 10,000; imprisonment of up to 1 year or a fine of up to Rs 1000, or both, for the first conviction of a seller or distributor; imprisonment of up to 2 years and a fine of up to Rs 3000 for subsequent convictions.

Warning labels

The producer, supplier, distributor and seller are responsible for ensuring that the tobacco packages they trade carry the specified warnings.

Enforcement authority

Inspectors of Food and Drug Administration, police officers not below the rank of sub-Inspectors and any other officers authorized by the Central and State Governments are the designated enforcement authorities under the law.

Framing of rules under the Act

The enactment of the new tobacco control legislation of 2003 had to be followed by the framing and notification of rules related to the implementation of the key provisions of the Act. This task has been undertaken by the Ministry of Health, Government of India. The first set of rules has been notified on 25 February 2004 and came into effect from 1 May 2004. The following provisions have been notified:

- Prohibition of smoking in a public place (Box 6.5)
- Prohibition of advertisement of cigarettes and other tobacco products, and
- Prohibition of sale to minors.

The rules relating to each are as follows:

Prohibition of smoking in a public place

1. The owner or manager or person in-charge of the affairs of a public place shall cause to be displayed prominently a board, of a minimum size of 60 centimetres by 30 centimetres in the Indian language(s) as applicable, at least one at the entrance of the public place and one at conspicuous place(s) inside, containing the warning 'No smoking area—Smoking here is an offence'.

Box 6.5 What is a public place under the Indian law?

The Act of 2003 defines 'public place' as any place to which the public have access, whether as a right or not, and includes auditoria, hospital buildings, railway waiting rooms, amusement centres, restaurants, public offices, court buildings, educational institutions, libraries, public conveyances and the like which are visited by the general public but does not include any open space.

Since the phrase 'but does not include any open space' may create ambiguity with respect to some places of public gathering, the rules notified on 25 February 2004, provide a clarification with respect to the definition. This states that 'open space', as mentioned in Section 3(1) of the Act, shall not include any place visited by the public such as an open auditorium, stadium, railway station, bus stop and such other places. Thereby, such places are clearly brought into the ambit of public places where smoking of tobacco products is prohibited.

2. The owner or manager or person in-charge of the affairs of a hotel having thirty rooms or a restaurant having a seating capacity of thirty persons or more and the manager of the airport shall ensure that
   (i) the smoking and non-smoking areas are physically segregated;
   (ii) the smoking area shall be located in such manner that the public is not required to pass through it to reach the non-smoking area; and
   (iii) each area shall contain boards indicating thereon 'Smoking area/Non-smoking area'.

Prohibition of advertisement of cigarettes and other tobacco products

1. The size of the board used for advertisement for cigarettes and any other tobacco products displayed at the entrance or inside a warehouse or a shop where cigarettes and any other such tobacco products are offered for distribution or sale shall not exceed 90 centimetres by 60 centimetres and number of such boards shall not exceed two.
2. Each such board shall contain in the Indian language(s) as applicable, one of the following warnings occupying 25% of top area of the board:
   (i) Tobacco causes cancer, or
   (ii) Tobacco kills.
3. The board referred to in sub-rule 2 shall contain only the brand name or picture of the tobacco product and no other promotional message and picture.

Prohibition of sale to minors

1. The owner or manager or person in-charge of the affairs of a place where cigarettes and other tobacco products are sold shall display a board of minimum size of 60 centimetres by 30 centimetres at conspicuous place(s) containing the warning 'Sale of tobacco products to a person under the age of 18 years is a punishable offence' in the Indian language(s) as applicable.
2. The onus of proof that the buyer of the tobacco product is not a minor lies with the seller of the tobacco products. The seller, in case of doubt, may request the tobacco purchaser to provide appropriate evidence of having reached 18 years of age.

The rules pertaining to other provisions (such as packaging and labelling and disclosure of tar and nicotine contents of tobacco products/ emissions) are under preparation and are expected to be notified by the end of 2004.

Effective implementation of the law calls for an informed community, empowered to assert the entitlements under the law, supplemented with a clear and simple mechanism for reporting violations. For instance, in the case of advertising on the fencing walls of private property, the individual property owner needs to be educated of its implications under the new law, so as to reduce the incidence of violations.

Some of the matters covered by the law require technical expertise, such as deciding the permissible levels of tar and nicotine to be displayed on tobacco packs. There are other provisions such as smoking regulations that

require extensive enforcement staff. Issues arising from indirect advertising would call for judgment by competent authorities to uphold the spirit of the law. Tobacco control raises several other issues that would require a competent national regulatory authority to oversee tobacco control policies in the country. This body would be able to exercise jurisdiction over a wide range of issues beginning with establishing mechanisms for reporting violations under the law, setting up standards for product regulations and recommending future requirements for tobacco control in India.

6.1 LEGISLATION AND ENFORCEMENT

KEY MESSAGES

- The Government of India in 1975 enacted the Cigarettes (Regulation of Production, Supply and Distribution) Act, which made it mandatory to display a statutory health warning on all packages and advertisements of cigarettes.
- During the 1980s and 1990s, Central and State Governments imposed further restrictions on tobacco trade and efforts were initiated to bring forth a comprehensive legislation for tobacco control.
- Although the government accepted the recommendations of the regional and national consultations on 'Tobacco or Health' (1991), the proposal was deferred to evaluate the economic impact of tobacco control.
- In the 22nd Report of the Committee on Subordinate Legislation, a series of substantive suggestions were made for measures to achieve better results in the field of tobacco control. On this basis, the Union Ministry of Health and Family Welfare introduced the Tobacco Control Bill in the Rajya Sabha on 7 March 2001.
- The High Court of Kerala and Supreme Court of India called for effective bans on smoking in public places and affirmed the rights of non-smokers to breathe air free from tobacco smoke.
- The Indian Parliament passed the 'Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Bill, 2003 in April 2003. This became an Act on 18 May 2003. Rules were formulated and enforced from 1 May 2004.
- Effective implementation of the law calls for an informed community, empowered to assert the entitlements under the law, supplemented with a clear and simple mechanism for reporting and penalizing violations.

6.2

The WHO Framework Convention on Tobacco Control (FCTC) and its Implications for India

The World Health Assembly of the World Health Organization (WHO) adopted the Framework Convention on Tobacco Control (FCTC) at its 56th Session in May 2003. The Convention will come into force after 40 countries have ratified it (Article 36). India ratified the convention on 5 February 2004. It was the eighth and the largest country to ratify till October 2004.

In India, a comprehensive legislation has been enacted, namely The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003 (hereinafter referred to as the Indian Act) for reducing the exposure of people to tobacco smoke, prohibition of advertisements, prohibition of sale to minors and regulating the contents of tobacco products.

This section describes the legal nature of the FCTC, the process of its adoption, its key provisions and compares the measures recommended by the FCTC with the provisions contained in the Indian Act. It is proposed to identify the obligations of a State Party under the FCTC and examine the provisions of the Indian Act, other relevant Indian laws and regulations for tobacco control to assess whether they are adequate for the purpose of implementing the treaty obligations of India under the FCTC and, if not, what further steps are necessary.

What is a framework convention?

A framework convention is an international legal instrument that contemplates progressive development of international law by establishing a general system of governance for a specific issue. It lays down general requirements for countries (Member States of WHO), with respect to the measures they need to take in the area covered by the convention. It does not spell out the specific rules to be enacted or implemented through national law but indicates the nature of legal, administrative, regulatory and other measures that need to be taken in accordance with the national law. It is expected that the Parties to the Convention would modify existing laws or develop new national laws which would reflect the commitments they have undertaken with respect to the Convention. At the international level, more specific commitments and institutional arrangements for implementing them would be developed and adopted through specific protocols which cover some of the key areas identified by the Convention. Thus, the follow-up process involves actions both at the national and international levels (Fig. 6.1).

What is the FCTC?

As a UN organization, the WHO has a constitutional mandate to initiate the development and

Framework for national action	FCTC	Framework for international cooperation
• Comprehensive ban on advertising • Protection against second-hand smoke • Prohibition of youth access • Prominent health warnings • Testing and regulation of contents • Increase in tobacco taxes • Cessation programmes • Alternative crops • Surveillance		• Ban on cross-border advertising • Prevention of illicit trade • Scientific and legal cooperation • Technical assistance • Financial support for FCTC implementation (bilateral and multilateral channels) • Monitoring
Requires partnerships within countries		Requires partnerships among countries

Fig. 6.1 Framework for national action and international cooperation

facilitate the adoption of international treaties, such as a framework convention. The WHO has been encouraging the adoption of national laws and regulations for tobacco control for a long time but this was the first time it used its constitutional mandate to facilitate the creation of an international framework convention specifically focusing on the global public health issue of tobacco control. The FCTC is the first ever international public health treaty of any kind.

The FCTC has designed the fundamental matrix of measures essential for tobacco control, while protocols would be negotiated later on specific issues such as cross-border advertising, promotion and sponsorship of tobacco products; tobacco-product regulation; illicit trade in tobacco; and liability. Such an approach was adopted by the International Negotiating Body (INB) which debated, developed and approved the final text of the FCTC. The INB was of the view that a specific issue is often best addressed in a protocol either because of its technical complexity, which requires that it should be dealt with separately by a negotiating group of specialists, or because an issue is controversial and requires considerably more discussion than the rest of the text. The WHO, which acted as the secretariat of the INB, pointed out that the negotiation of a framework convention does not indicate the completion of a process, but marks the commencement of an agreed international action which would further develop pathways for implementation. These will include the formulation of one or more protocols.

The FCTC, thus, does not clearly lay down a law which shall be universally applicable, but sets out guidelines for various national and international measures that would encourage smokers to quit and restrain non-smokers from taking to the habit. It promotes smoke-free environment policies, banning of advertisements, increase in taxes, reduced youth access to tobacco products as well as education and media campaigns to increase awareness about the health hazards of tobacco consumption and the health benefits of tobacco cessation. It envisages international cooperation, including promotion and transfer of technical, scientific and legal expertise, and technology, for assisting in the development of a strong legislative foundation and technical programmes for protection from exposure to tobacco smoke and other tobacco products. Each Party to the FCTC is expected to implement these provisions, in accordance with its capacity and constraints.

The text of the FCTC does not impose on the Parties any significant obligations that are prescriptive in nature. Given the divergence of interests of the Parties negotiating the convention, it was difficult to secure universal consent, which was necessary to establish binding rules. The FCTC has some provisions which are mandatory ('Parties shall...') and other provisions which are recommendatory ('Parties should...'). Many of the provisions have qualifying phrases, such as 'where appropriate', 'in accordance with its [a Party's] capacity/ capability', 'as far as possible' and 'in accordance with its [a Party's] national law'. These phrases provide the Parties with a large degree of operational flexibility in implementing the measures recommended by the FCTC. The FCTC, however, explicitly encourages countries to implement measures that are stronger than the minimum standards required by the treaty.

Therefore, from the perspective of international law, it can be said that the FCTC is predominantly a standard-setting document which identifies various measures that can help Member States in adopting a comprehensive tobacco control strategy but it has a few provisions which impose a binding obligation on the Parties. Such obligations, in specific areas, may need to be better defined in the protocols. It may be possible to do so with greater ease than in the case of the FCTC, since the protocols would be negotiated by the Conference of Parties (COP) which comprises Member States that have ratified the convention and are, therefore, likely to have a greater convergence of views. Other countries, which are less committed to the objectives of global tobacco control, are unlikely

to ratify the convention and, thus, would not be participants in the process of developing the protocols.

How was the FCTC negotiated?

The processes of negotiation of the FCTC started in 1999 with a series of preparatory meetings, including two intergovernmental working group meetings, to identify the key elements of a comprehensive tobacco control strategy which would need to be incorporated in the FCTC. The first working group meeting was held on 25 October 1999 at Geneva. The first meeting of the INB comprising all Member States of WHO was convened at Geneva during 16–20 October 2000. The INB met six times during 2000–2003 to negotiate several drafts of the text of the convention. In the inter-session intervals between the INB meetings, regional consultations were held at the level of each WHO Region. This facilitated the development of a regional consensus and the adoption of common positions at subsequent INB meetings. The INB adopted the final text, by consensus, on 1 March 2003, at Geneva. This was later forwarded to the 56th World Health Assembly for its consideration and adoption.

India's role in the FCTC negotiations

From the FCTC negotiations India emerged as a country whose principled positions in support of public health were widely acclaimed by the international community. Throughout the negotiations, India advocated strong provisions in the FCTC, which would favour effective tobacco control. India was unanimously elected as the coordinator of the group of countries affiliated to the WHO South-East Asia Regional Office (SEARO). Four regional consultations of the SEARO group of countries were held during the inter-session periods between the 2nd and 6th rounds of the INB meetings. India chaired these consultations (held successively at Jakarta, Thimphu, Jaipur and Yangon) and catalysed consensus development and consolidated strong and unified regional positions on the draft text of the FCTC. In the later stages of negotiations at the INB level, India contributed to the coordinated action by a larger coalition of developing countries from the South-East Asia Region, Eastern Mediterranean Region, African Region, the Caribbean countries and the Pacific Island nations.

India was requested by this alliance of developing countries to act as the principal negotiator, on their behalf, on the advertising issue. India was also requested by the G-77 and China group of developing countries to be a part of the principal negotiating team on issues related to financial resources. The Indian delegation also made crucial contributions to the elaboration of the section on illicit trade in tobacco products. India's leadership was clearly evident, and widely appreciated, on these and other issues of vital interest to the developing countries (Box 6.6).

India's effective leadership in the negotiations and strong advocacy of pro-public health positions was acclaimed and 'awarded' by various civil society groups. The Framework Convention Alliance of global non-governmental organizations (NGOs) supporting a strong FCTC repeatedly conferred its Orchid award on India (4 awards) and the South-East Asia Region (4 awards), the highest number of awards received by an individual country or a Region. The WHO too recognized India's pivotal role by presenting the WHO Director General's award to a key negotiator from the Indian delegation—Professor K. Srinath Reddy—for outstanding contributions to global tobacco control at the World Health Assembly in May 2003.

The strong stance taken by India, in favour of measures contributing to effective tobacco control, came as a surprise to many governments and NGOs who had assumed that India, as a large tobacco-growing country, would have several reservations against tobacco control. India's strong position was created and consolidated by several domestic developments that occurred in the past decade. Anti-tobacco

Box 6.6 Civil society's views on India's role in developing the FCTC

'I am writing to you on behalf of the over 180 non-governmental organizations from around the world which make up the Framework Convention Alliance. Members of the Alliance have been closely following the progress of the negotiation of the Framework Convention on Tobacco Control and have been pleased by the final draft which was agreed to at the final round of negotiations in February/March this year.

I would like to acknowledge our deep appreciation for the leadership shown by the Indian delegation during the drafting of the treaty, and for their determination to see that the world's first public health treaty include strong evidence based provisions. The final treaty is a genuine triumph for the public health community and for the many developing countries which fought for strong language.

In connection with this we are delighted to hear that India is currently tabling the progressive Cigarettes and Other Tobacco Bill, 2001 in the national Parliament. The Bill, as we understand, would be the first move on the part of a Member State of the World Health Assembly (WHA) since the FCTC negotiations ended last month, in raising national laws to be competent with international standards. With the passage of the Bill, India would be in the forefront of the world's nations in carrying out the spirit of FCTC.

The proposals in your Bill banning direct and indirect tobacco advertising, smoking in public places and introducing pictorial health warnings on tobacco packs is supported by scientific evidence and international best practice. This would go a long way in reducing tobacco consumption and in curbing the tobacco epidemic that currently kills a million Indians every year.'

—Belinda Hughes
Coordinator, Framework Convention Alliance

(in a letter sent to the Health Minister of India, after the conclusion of the FCTC negotiations)

'India was at the forefront of those calling for an international treaty to effectively control the death and disease caused by tobacco. Dr Srinath Reddy proposed such a treaty in 1997 in a presentation at the Oslo Consultation on International Health and at the Montreal Conference on Preventive Cardiology. During the negotiations, the Indian delegation steadfastly called for strong treaty provisions that favored public health. The Indian delegation represented a combined grouping of developing countries (SEARO, AFRO, EMRO, Caribbean and Pacific Nations) as the prime negotiator on the contentious issue related to Advertising, Promotion and Sponsorship and succeeded in securing one of the strongest advertising ban provisions possible. The Indian delegation helped ensure that the FCTC is one of the proudest accomplishments in public health.'

—Judith P. Wilkenfeld
Director (International Programs), Campaign for Tobacco-Free Kids, USA

'India played a pivotal role in the FCTC negotiations. As the world's largest democracy, as well as one of the largest producers of tobacco, its positions carried significant weight, particularly with those developing countries that had previously been sitting on the fence. Its strong, principled positions, as well as its historical leadership role in the G-77, convinced many other countries that the treaty was worth supporting. India also presented a formidable obstacle to those developed countries, like the United States, which sought to weaken the treaty. Too big and powerful to ignore, India was a force to be reckoned with, from the first day of the negotiations until the final gavel fell.'

–Ross Hammond
Independent Consultant on Tobacco Control, USA

'The Indian delegation played a consistently key role during the many years of the FCTC negotiations, showing both leadership and a deep concern for public health in India and also globally. This support was particularly important in demonstrating that tobacco control is not the prerogative of western countries, but that the voice of developing countries can and should be heard.'

— Judith Mackay
Global Expert on Tobacco Control and Special Advisor to Director General of WHO

advocacy by civil society groups, especially the youth, enhanced the awareness of the devastating health effects of tobacco among policy-makers, the media and the public. Parliamentary opinion crystallized in favour of strong tobacco legislation, overcoming earlier doubts on the economic consequences of tobacco control. Judicial pronouncements, in recent years, directed Central and State Governments to ban smoking in public places. Several State Governments imposed a ban on the sale of oral tobacco products. The widening support for tobacco control led to a Tobacco Control Bill being introduced in Indian Parliament, even as the FCTC negotiations got under way at Geneva. The International Consultation on Tobacco Control in Developing Countries, convened by the WHO as a curtain

raiser to the FCTC negotiations, was organized at New Delhi in January 2000. This was inaugurated by the Prime Minister of India, who affirmed India's commitment to a comprehensive strategy for tobacco control, in the presence of the Director General of WHO. The strong provisions of the Tobacco Control Bill, approved by the Indian Cabinet for introduction in Parliament, greatly enabled the Indian delegation to adhere to firm advocacy of a strong FCTC. These two parallel processes culminated close together, with the passage of the Indian Act by Indian Parliament in April 2003 and the adoption of the FCTC by the World Health Assembly in May 2003.

How will the FCTC be implemented?

After its adoption by the World Health Assembly in May 2003, the FCTC was opened up for signature and ratification by Member States of WHO. By the end of June 2004, 168 countries had signed the FCTC and 23 countries had ratified it after obtaining the approval of their respective national parliaments/cabinets. The Convention would come into force at the global level, when 40 countries have ratified it. Other countries who have signed by June 2004 can ratify even thereafter. Countries who have signed but do not ratify at all are under an obligation not to undermine the implementation of the treaty in any way. Countries who have not signed by June 2004 may still become parties to the Convention through accession. All countries who become parties to the Convention, through ratification or accession, constitute the COP. The FCTC requires that the first meeting of the COP would be convened within one year of the 'entry into force' of the Convention, i.e. within one year of the fortieth country ratifying the FCTC. The COP and its secretariat would be responsible for further implementation of the FCTC and for monitoring the national-level actions being taken by Member States that are Parties to the Convention. The COP would select and designate the Permanent Secretariat. Meanwhile, WHO is functioning as the Interim Secretariat of the FCTC.

Objectives and key provisions of the FCTC

The objective of the Convention and its protocols is 'to protect present and future generations from the devastating health, social, environmental and economic consequences of tobacco consumption and exposure to tobacco smoke by providing a framework for tobacco control measures to be implemented by the Parties at the national, regional and international levels in order to reduce continually and substantially the prevalence of tobacco use and exposure to tobacco smoke.'

To achieve the objective of the Convention and to implement its provisions, certain guiding principles are elaborated which emphasize the need for: informing people of the health hazards of tobacco; strong political commitment on tobacco control; international cooperation; multisectoral tobacco policies; liability as a tobacco control strategy; technical and financial assistance for economies adversely affected by tobacco control programmes; and the participation of civil society in tobacco control efforts (Article 4).

Among the general obligations, which are applicable to all countries of the COP that will implement the FCTC, is an obligation to develop, and periodically update and review, comprehensive multisectoral national tobacco control strategies, plans and programmes in accordance with the Convention (Article 5.1). To fulfil this obligation, the Parties are obliged to establish or reinforce and finance a national coordinating mechanism or focal points for tobacco control. The Parties are also required to adopt and implement measures and cooperate with other Parties to develop policies for preventing and reducing tobacco consumption, nicotine addiction and exposure to tobacco smoke (Article 5.2).

Other general obligations for State Parties include protection of public health policies related to tobacco control from commercial and other vested interests of the tobacco industry,

cooperation between themselves and with competent international and regional inter-governmental organizations to achieve the objectives of the Convention and raising of financial resources for effective implementation of the Convention through bilateral and multilateral funding mechanisms.

To achieve the objectives of the FCTC, several demand reduction measures and some supply reduction measures have been recommended along with mechanisms for establishing and enhancing international cooperation. The demand reduction measures include both price and tax measures as well as several non-price measures. In recognition of the evidence that price and tax measures are an effective and important means of reducing tobacco consumption by various segments of the population, in particular young persons, the FCTC advocates that Parties implement tax and price policies aimed at reducing tobacco consumption. It also recommends prohibition or restriction of tax and duty-free sale or importation of tobacco products (Article 6).

The non-price measures include protection from exposure to tobacco smoke in public places (Article 8), ban or restriction of tobacco advertising, promotion and sponsorship (Article 13), programmes to promote tobacco cessation (Article 14), regulation of packaging and labelling of tobacco products to provide effective health warnings and prohibit misleading messages (Article 11), regulation of the contents of tobacco products (Article 9), regulation of tobacco product disclosures (Article 10) and programmes for education, communication, training and public awareness (Article 12).

The supply reduction measures recommended by the FCTC are elimination of all forms of illicit trade in tobacco products (Article 15), sales to and by minors (Article 16) and provision of support for economically viable alternative activities for tobacco workers and growers (Article 17). The key features of the main articles of the FCTC are listed in Table 6.3. The full text of the FCTC is available on the websites www.fctc.org and www.who.int.

Table 6.3 What does the FCTC recommend?

Taxation and duty-free sales

Tax policies should aim to help tobacco control.

- Tax and price policies to promote tobacco control recommended for national-level action

Duty-free sales are discouraged.

- Countries may prohibit/restrict duty-free sales and importation

Second-hand smoke (Article 8)

Non-smokers must be protected from exposure to tobacco smoke. Such protection must extend to

- Indoor workplaces
- Public transport
- Indoor public places
- Other public places, as appropriate

Product regulation and ingredient disclosure (Articles 9 and 10)

Tobacco products are to be regulated.

- COP shall propose guidelines for testing and measuring the contents and emissions of tobacco products and for further regulation of these contents and emission
- Countries shall adopt and implement measures for such testing, measuring and regulation

Ingredients are to be disclosed

- Manufacturers and importers shall disclose, to governmental authorities, information on contents and emission
- Measures for public disclosure of information about toxic constituents and emissions

Packaging and labelling (Article 11)

Large health warning labels are required.

- Rotating warnings
- Large, clear, visible and legible
- Should be 50% or more of the principal display areas (shall not be less than 30%)
- May be in the form of or include pictures/pictograms

Deceptive labels must be prohibited.

- False/misleading term, descriptor, trademark or any other sign shall be prohibited (e.g. 'mild', 'low tar', 'light')

Table 6.3 (*cont.*) What does the FCTC recommend?

Education, communication, training and public awareness (Article 12)
Each party shall promote and strengthen public awareness of tobacco control issues.
- Broad access to effective and comprehensive educational and public awareness programmes on
  —Health risks of tobacco consumption
  —Risks of exposure to tobacco smoke
  —Risk of addiction
  —Benefits of tobacco cessation
- Public access to a range of information on the tobacco industry
- Training or sensitization and awareness programmes to various stakeholder groups
- Public awareness and access to information on the health, economic and environmental consequences of tobacco production and consumption

Advertising, promotion and sponsorship (Article 13)
A comprehensive ban is required.
- Restriction regime is permitted only for countries with constitutional barriers
- Minimum package of measures prescribed
- Direct and indirect advertising and promotion covered
- Cross-border advertising subject to ban and penalty
- Protocol on cross-border advertising recommended

Tobacco dependence and cessation (Article 14)
Parties shall take effective measures to promote cessation of tobacco use and adequate treatment for tobacco dependence.
- Design and implement effective tobacco cessation programmes in such locations as educational institutions, health care facilities, workplaces and sporting environments
- Include diagnosis and treatment of tobacco dependence and counselling services on cessation of tobacco use in national health and education programmes, plans and strategies
- Establish tobacco cessation programmes in health care facilities and rehabilitation centres
- Facilitate accessibility and affordability for treatment of tobacco dependence including pharmaceutical products

Smuggling (Article 15)
Action is required to eliminate tobacco smuggling.
- Origin and final destination must be indicated on the packaging
- Develop a practical tracking/tracing regime
- Confiscate products and proceeds of illicit trade
- Cooperate with one another in anti-smuggling, law enforcement and litigation efforts

Sales to and by minors (Article 16)
- Parties shall prohibit the sale of tobacco products to persons under the age set by national law, or eighteen years of age
- Parties shall prohibit or promote the prohibition of the distribution of free tobacco products
- Curbs on or prohibition of tobacco vending machines
- Prohibition of sale by minors, as per national law

Financing (Article 26)
Parties have committed themselves to promote funding for global tobacco control
- Mobilize financial assistance from all available sources for developing countries and economies in transition
- Encourage regional and international intergovernmental organizations to contribute
- Strengthen existing mechanisms for bilateral and multilateral contributions
- COP will consider proposals for a global fund

Support for economically viable alternatives (Article 17)
Parties shall promote, as appropriate, economically viable alternatives for tobacco workers, growers and, as the case may be, individual sellers.

Liability (Article 19)
Legal action is encouraged as a tobacco control strategy.

National coordinating mechanism (Article 5)
Each Party shall establish or reinforce and finance a national coordinating mechanism or focal point for tobacco control.

Participation of non-governmental organizations (Articles 12, 20)
Parties shall promote awareness and participation of non-governmental organizations, not affiliated with the tobacco industry, in developing and implementing intersectoral programmes and strategies for tobacco control (Article 12) and cooperate with non-governmental agencies in regional and global tobacco surveillance and exchange of information (Article 20).

Treaty Oversight (Article 23)
A COP will oversee the implementation of the Treaty.

Secretariat (Article 24)
COP will designate a Permanent Secretariat. WHO will act as the Interim Secretariat.

Settlement of Disputes (Article 27)
Parties shall settle disputes through negotiation, mediation or conciliation failing which arbitration will be resorted to as prescribed by the COP.

Financial resources for implementing the FCTC

Recognizing the important role that financial resources will play in achieving the objectives of this Convention, each Party is obliged to provide finances for national activities intended to achieve the objectives of the convention in accordance with its national plans, priorities and programmes (Articles 26 and 5.6).

The Parties have agreed to promote the utilization of existing regional, sub-regional or other multilateral channels to provide funding for multisectoral tobacco control programmes and to encourage relevant regional and international intergovernmental organizations, and financial and development institutions to provide financial assistance to developing country Parties.

The FCTC has no mandated provision for a voluntary global fund. However, the COP at its first session will review the existing and potential sources based on a study conducted by the Secretariat and other relevant information and consider their adequacy. The results of this review shall be taken into account by the COP in determining the necessity to enhance existing mechanisms or to establish a voluntary global fund or other appropriate financial mechanisms to meet the need for financial resources for developing country Parties and Parties with economies in transition.

Reporting and exchange of information

The reporting system ensures supervision, by a designated body, of compliance by the Parties of the prescribed obligations under a treaty. The FCTC has given this mandate to the COP (Article 21). The State Parties are required to submit their initial report to the COP within 2 years of the entry into force of the Convention for that Party. The report has to provide information on the measures a State has taken to implement its obligations under the Convention and the difficulties it faces in such implementation.

The Convention also requires Parties to provide information on various specified measures, such as rates of taxation for tobacco products and trends in their consumption; measures taken for introducing a comprehensive ban on advertising; expenditures by the tobacco industry on advertising, sponsorship and promotion (if not prohibited); data on cross-border trade in tobacco products, information on the health effects of the consumption of tobacco products and exposure to tobacco smoke, as well as information on legislation and regulations in force and relevant jurisprudence.

Box 6.7 How can India deal with cross-border advertising of tobacco products?

The provisions related to the ban and penalties for cross-border advertising were included in Article 13 of the FCTC, principally due to India's initiative. The sovereign right of countries that have imposed a comprehensive ban on tobacco advertising, promotion and sponsorship to ban cross-border activities of a similar nature is clearly recognized. Such countries can also impose penalties for cross-border violations of such a ban, provided the penalties are on par with those prescribed for domestic violations. The onus thereby shifts from countries having to use sophisticated technologies to block cross-border advertising to tobacco manufacturers and their agents who have to ensure that the cross-border ban is not violated. However, imposing monetary penalties or prison sentences on foreign violators may be a difficult and long-drawn process under international law. India can overcome that obstacle by prescribing the penalty of suspension of marketing licence of an advertised tobacco product, under the domestic law. This could be in the form of suspension of the licence for a period of six months for the first violation and a year for each of the subsequent violations. Once this penalty is applicable to domestic violators, it would also become applicable to a cross-border violator who is marketing tobacco products in India. This would act as a deterrent to a foreign tobacco manufacturer, who would then have to take care not to place advertisements in channels which enter India. The Indian Act needs to be amended to incorporate such a provision, to erect a strong barrier against the entry of cross-border advertising, promotion and sponsorship into the Indian territory.

What more does India need to do to implement the FCTC?

Under the Constitution of India, the authority to enter into treaties and international agreements and to subsequently ensure their implementation vests with the Central (Union) Government (Article 248 read with entry 14 of Schedule VII). Under international law there is a general duty for a Party to ensure that its municipal law is in conformity with its treaty obligations but there is no express requirement to incorporate a treaty into a separate law if provisions of the treaty can be implemented by existing legislative or other measures.

The Indian Government has been pursuing a proactive and bold strategy for tobacco control. The Indian Act, whose enactment preceded the adoption of the FCTC by the World Health Assembly, goes beyond the obligations set out in the FCTC in many respects. It provides clearly prescribed requirements in key areas such as on prohibition of smoking in public places, ban on advertising of tobacco products, packaging and labelling and sale to minors.

The following measures, however, are required to be undertaken by India to fully implement the obligations under the FCTC: prohibition on use of false descriptors; rotation of messages; sale by minors; setting up a national coordinating point for tobacco control to monitor the actions taken to implement the treaty in India; allocation of funds for tobacco control; initiatives to provide training or sensitization and awareness programmes on tobacco control to health workers, community workers, social workers, media professionals, educators, decision-makers, administrators and other concerned persons; develop and implement intersectoral programmes and strategies for tobacco control programmes aimed at promoting the cessation of tobacco use, and providing information on tobacco industry disclosures.

Table 6.4 provides a comparison of the FCTC with the Indian Act and indicates where additional legal or administrative measures need to be taken, to ensure full compliance with the FCTC.

Table 6.4 Main provisions of the FCTC compared with The Cigarettes and Other Tobacco Products Act, 2003

Issue	Provision in the FCTC	Provision in the Indian Act
Taxes	It formally recognizes that the tax and price measures are an important way of reducing tobacco consumption and therefore recommends that Parties should adopt or maintain appropriate measures which may include implementation of tax and price policies on tobacco products so as to contribute to the reduction of tobacco consumption.	This is not a legislative measure and hence not a part of the Indian Act. The recommendation in the FCTC would be useful for advocacy with the Ministry of Finance to progressively increase taxes on tobacco products.
Duty-free sales	It prohibits or restricts, as appropriate, sale or importation of tax and duty-free tobacco products.	This is not a legislative measure but would require administrative action by the Ministry of Finance.
Second-hand smoking	It requires that each Party, as per national law, shall adopt and implement measures to provide for protection from exposure to tobacco smoke in public places.	This aspect is effectively covered in the Indian Act and public places are defined very comprehensively in the provisions of the Act and clarified in the relevant rules which have been subsequently notified.
Content regulation	It states that the COP shall propose guidelines for testing and measuring contents and emissions of tobacco products and the signatories will adopt and implement the same with the approval of competent national authorities.	Provision for testing and measuring the nicotine and tar content of tobacco products (where applicable) have been included.
Regulation of tobacco product disclosures	It imposes a dual obligation on each State Party, first by requiring it to seek information from the manufacturers and importers of tobacco products, about the contents and emissions of such products, and second to disclose relevant information to the public.	Section 7(5) of the Indian Act requires that information regarding the nicotine and tar contents in each cigarette or other tobacco product along with maximum permissible limits have to be indicated on every package of cigarettes or any other tobacco product. This obligation extends to the producers,

Table 6.4 (*cont.*) Main provisions of the FCTC compared with The Cigarettes and Other Tobacco Products Act, 2003

Issue	Provision in the FCTC	Provision in the Indian Act
		suppliers and the distributors. However, there is no obligation under the Act requiring manufacturers and importers to disclose information about the contents and emissions of tobacco products to the government and similarly there is no obligation on the government for public disclosure of this information. Therefore, appropriate provisions to provide for the same are required to be introduced in the Act/Rules. This is essential since the government requires information to be obtained on the several constituents of tobacco products and their emissions, besides tar and nicotine.
Packaging and labelling	It requires that effective measures shall be taken, within three years after entry into force of the Convention, to ensure that tobacco product packages do not give misleading descriptors such as 'low tar', 'ultra-light', 'mild', etc. which create the false impression that a particular tobacco product is less harmful than others. The packaging should also contain information on constituents and emissions of the tobacco product.	There is no provision in the Indian Act which specifically prohibits the use of misleading terms. Such prohibition may be introduced while defining the rules related to the packaging and labelling will contain detailed regulations for warnings and disclosure of constituents on tobacco product packs. The measures in this regard would be required to be taken either through an amendment in the Act or by a specific provision under the rules. The Indian Act, however, requires that information regarding the nicotine and tar contents in each cigarette or other tobacco product along with maximum permissible limits have to be indicated on every package of cigarettes or any other tobacco product. This obligation extends to the producers, suppliers and distributors. The size of the letters or figures regarding the indication of nicotine and tar contents would be prescribed by the rules.
Health warnings	It recommends that at least 30%, but preferably 50% or more, of the principal display area of the packages of tobacco carry rotating health warnings that are large, clear, visible, legible and may be pictorial.	It suggests prominent warnings, including pictorial warnings on not less than one of the largest panels of the package. The health warnings should include a pictorial depiction of skull and crossbones and any other such warnings may be prescribed. The exact sizes of the health warnings will be detailed in the rules which are to be notified.
Education, communication, training and public awareness	It requires that Parties promote and strengthen public awareness of tobacco control issues using all available communication tools as appropriate. These measures include broad access to comprehensive public awareness campaigns on the adverse health, economic and environmental consequences of tobacco use and participation of public, private agencies and NGOs in the development of inter-sectoral strategies for tobacco control.	Since these are not legislative measures, they are not included in the Indian Act. These require administrative actions led by the Ministry of Health but also involving other relevant ministries to mobilize multiple stakeholders, engage the civil society and utilize public–private partnerships.
Advertising, promotion and sponsorship of tobacco products	It requires Parties to implement a comprehensive ban, within five years of the Convention entering into force. It also contains provisions for countries that cannot implement a comprehensive ban, due to constitutional barriers, to restrict tobacco advertising, promotion and sponsorship within the limits of their laws. Parties which have imposed a ban on advertising have the sovereign right to ban cross-border tobacco advertising, promotion and sponsorship as well as to impose equal penalties as applicable to domestic violations of the ban on advertising,	The Indian Act imposes a total ban on direct and indirect advertising of cigarettes and other tobacco products, and also prohibits sponsorship of sports and cultural events. The obligation not to advertise extends to producers, suppliers and distributors; to persons who control the media; and to models who take part in advertisements which promote the use and consumption of cigarettes or any other tobacco product. Point-of-sale advertising is, however, permitted. This too would need to be

Table 6.4 (*cont.*) Main provisions of the FCTC compared with The Cigarettes and Other Tobacco Products Act, 2003

Issue	Provision in the FCTC	Provision in the Indian Act
	promotion and sponsorship. Parties are also required to consider the elaboration of the protocol for international collaborative action for a comprehensive ban on cross-border advertising promotion and sponsorship.	banned or markedly restricted to make the Indian Act fully compatible with the FCTC. The Indian Act does not have any specific provision on cross-border advertising (Box 6.7) but cross-border advertising can be regulated under the Act as it puts an obligation on the persons controlling the media not to advertise cigarettes or other tobacco products. Therefore, the media would be responsible for transmitting any transnational advertising in or out of the country. This would of course be subject to the technical means and competence available with the media.
Surrogate advertising	This aspect is covered under the definition of 'tobacco advertising and promotion'.	The ban on advertising also extends to indirect advertising.
Tobacco cessation	It requires the promotion of effective measures for cessation of tobacco use and adequate treatment for tobacco dependence.	This is not a legislative measure. It requires administrative action by the Ministry of Health and allied agencies to expand and strengthen existing tobacco cessation programmes.
Illicit trade	It recognizes that elimination of all forms of illicit trade in tobacco products including smuggling; illicit manufacturing and counterfeiting are essential components of tobacco control. Therefore, each Party shall implement measures to ensure that all packages of tobacco products are marked to assist in determination of the origin of the product and monitored to control the movement of these products.	This is not part of the Act, which deals mainly with demand reduction measures. The measures to curb illicit trade are included in the Customs Act 1962, which would need review and amendment, as appropriate, to incorporate the specific recommendations of the FCTC.
Sale to and by minors	It requires implementation of measures at the appropriate government level to prohibit sales of tobacco products to minors. These measures, *inter alia,* include: placement of prominent indicators at the point of sale about the prohibition of sale to minors and prohibition of sale of cigarettes individually or in small packets, which increase the affordability of the same to minors. It also includes prohibition of sales of tobacco products by minors.	Prohibition of sale to minors is covered in the Indian Act. The detailed measures are to be included in the rules. To limit accessibility of tobacco to minors, the Act also bans the sale of tobacco products within 100 yards of educational institutions. The Act, however, does not have any provision which prohibits the sale of cigarettes or other tobacco products by minors or in department stores where consumers have direct access to store-shelves and vending machines. The sale of cigarettes, etc. individually and in small packets is also not prohibited. These provisions need to be incorporated into the Indian Act.
Support for economically viable alternative activities	It states that Parties shall, in cooperation with each other and competent international organizations, promote economically viable alternatives for tobacco workers, growers and, as the case may be, individual sellers.	These actions are not covered in the Indian Act since they are not legislative measures. Administrative measures need to be taken by the government, especially at the level of the Ministry of Agriculture and the Ministry of Labour.
Financial resources	Parties are required to provide financial support to national tobacco control programmes. They are also required to promote the utilization of bilateral, regional, subregional and other multilateral channels to provide funding for the development and strengthening of multisectoral comprehensive tobacco control programmes of developing country Parties.	This is not part of the Act. The Ministry of Health would need to identify the means by which adequate financial support can be mobilized from both national and international sources for supporting the effective implementation of a comprehensive national tobacco control programme.

Table 6.4 (*cont.*) Main provisions of the FCTC compared with The Cigarettes and Other Tobacco Products Act, 2003

Issue	Provision in the FCTC	Provision in the Indian Act
	The COP in its first session shall review existing and potential sources and mechanisms of assistance to developing country Parties in implementing the convention based on a study conducted by the WHO. The results of this study shall be taken into consideration in determining the necessity to enhance existing mechanisms or to establish a voluntary global fund or other appropriate financial mechanism to channel additional financial resources to developing country Parties in meeting the objectives of the Convention.	India was the initial proponent and later a strong advocate of the creation of a global fund mechanism for assisting developing countries in the implementation of comprehensive tobacco control programmes incorporating both demand-side and supply-side actions. It would need to continue this role as a member of the COP.
Liability	Parties to the Convention are encouraged to consider taking legislative action to deal with civil and criminal liability, including compensation by the tobacco industry where appropriate.	This is not part of the Indian Act. There is a need to evolve national policies on issues related to liability and compensation.

6.2 THE WHO FRAMEWORK CONVENTION ON TOBACCO CONTROL (FCTC) AND ITS IMPLICATIONS FOR INDIA

KEY MESSAGES

- The World Health Assembly adopted the Framework Convention on Tobacco Control (FCTC) at its 56th Session in May 2003. India was the eighth country to ratify the convention on 5 February 2004.
- The FCTC does not clearly lay down a law which shall be universally applicable, but sets out guidelines for various national and international measures that would encourage smokers to quit and restrain non-smokers from taking to the habit.
- India advocated strong provisions in the FCTC and was unanimously elected as the coordinator of the countries belonging to the WHO South East Asian Region. India's effective leadership in the negotiations and strong advocacy of pro-public health positions was acclaimed and 'awarded' by civil society groups.
- The widening support for tobacco control led to a Tobacco Control Bill being introduced in the Indian Parliament, even as the FCTC negotiations got under way at Geneva. The strong provisions of the Tobacco Control Bill, approved by the Indian Cabinet for introduction in Parliament, enabled the Indian delegation to adhere to firm advocacy of a strong FCTC.
- After its adoption by the World Health Assembly in May 2003, the FCTC was opened up for signature and ratification by Member States of the WHO. By the end of June 2004, 168 countries had signed the FCTC and 23 countries had ratified it after obtaining the approval of their respective national Parliaments/Cabinets. The FCTC would come into force when 40 countries have ratified it. All countries who become parties to the Convention, through ratification or accession, constitute the Conference of Parties (COP).
- Several demand reduction measures and some supply reduction measures have been recommended along with mechanisms for establishing and enhancing international cooperation. The reporting system of the FCTC ensures supervision, by a designated body (COP), of compliance by the Parties of the prescribed obligations under a treaty.
- The Indian Government has been pursuing a proactive and bold strategy for tobacco control. Although the Indian Act goes beyond the obligations set out in the FCTC in many respects, there is a need for some additional measures to be taken, to ensure full conformity with the FCTC.

6.3

Litigation, Consumer Action and Judicial Verdicts

Issues related to tobacco control have featured prominently in the Indian courts of law and the judicial verdicts have had a major impact on government policies as well as tobacco trade practices. The cases considered by the courts arose from either petitions filed by advocates of tobacco control pleading for stronger regulatory measures or by the tobacco industry, which challenged some of the regulatory measures.

The Indian judiciary has adopted an innovative approach to issues of public interest. A category of 'public interest litigation' (PIL) was developed in the 1970s, wherein any individual or organization could approach the court seeking its intervention on a matter of public interest. In such cases, it is not necessary for the plaintiff to be the directly affected party. Even a letter written to the High Court (apex court at the state level) or the Supreme Court (apex court at the national level) by a citizen or a group of citizens can be treated as a petition, if the court decides that a matter of public interest is involved. This has often been referred to as 'epistolatory' jurisprudence. The courts have, in many cases, even taken *suo moto* notice of newspaper reports on issues of public interest and issued notices to governments or even private parties. Such 'judicial activism' has resulted in several landmark judgments in areas such as environmental pollution and provision of essential health care. While foreign judgments are not binding upon Indian courts, the Indian judiciary has taken a view that they would like to draw the 'light' from any source, indigenous or foreign, so long as it is relevant and useful to promote and protect the citizen's fundamental rights. All of these practices have had an influence on tobacco-related litigation in India.

High Court of Kerala calls for a ban on smoking in public places in the State of Kerala

Responding to the apparent apathy of the policy-makers to several matters of public interest, Indian courts have often pioneered significant judicial interventions. The High Court of the State of Kerala in July 1999 issued a path-breaking judgment that, for the first time in India, banned smoking in public places. This order was applicable throughout the State of Kerala, and included a ban on smoking in theatres, bars, restaurants, shops, schools, trains, bus stands and footpaths.

The Plaint

A PIL petition was filed before the High Court of Kerala by a woman who complained of problems caused by exposure to tobacco smoke from co-passengers during frequent travel by bus. This writ petition (No. 24160/1998) was the first of its kind in India and was filed under Article 226 of the Constitution, contending that second-hand smoking violates the right to life that is guaranteed under Article 21 of the Constitution. The petition sought that appropriate measures be taken by the government to prosecute and punish persons guilty of smoking in public places as the same amounted to 'Public Nuisance', as defined under Section 268 of the Indian Penal Code (IPC).

The Judgment

In response to this petition, the High Court of Kerala delivered a judgment which stated that public health law to eliminate exposure to second-hand smoke is long overdue. The Court held that the policy-makers should pursue all the strategies that would help accomplish that goal including education, legislation, regulation, litigation and enforcement of the existing laws.

The Court relied upon various resolutions adopted by WHO, of which India is a party, especially the one adopted in the year 1986 urging Member States to formulate a comprehensive National Tobacco Control Strategy. The Court held that it was really saddening that despite India being a signatory to these resolutions, no significant follow-up action has been taken, except banning smoking in some public places and public transport, and printing a statutory warning on cigarette packets. It observed that even here the action has been half-hearted. The Court, noting the disturbing tobacco statistics, lamented the inaction on the part of the State. The Court held that the word 'Life' in Article 21 has not been defined but affirmed that it does not mean, nor can it be restricted only to, the vegetative existence or mere animal life from conception to death. The expression 'Life' has a much wider meaning, bringing within its sweep some of the finer graces of human civilization, which makes life worth living. Maintenance of health and the environment falls within the purview of Article 21, as their degradation adversely affects the life of citizens. Exposing unsuspecting individuals to second-hand smoke, with ominous consequences, amounts to taking away their life, by a slow and gradual process. In the light of the above, the Court held that:

- Public smoking of tobacco, whether in the form of cigarettes, cigars, *beedis* or otherwise, is illegal, unconstitutional and violative of Article 21.
- Tobacco smoking in public places falls within the purview of the penal provisions relating to 'Public Nuisance' as contained in the IPC and also the definition of air pollution as contained in the statutes dealing with the protection and preservation of the environment, in particular the Air Prevention and Control of Pollution Act, 1981.
- The Court further directed the print and electronic media to take note of the judgment and caution the public about the penal consequences of violation of the ban on smoking in public places.

The Supreme Court of India directs a ban on smoking in public places across India

Upholding this judgment and recognizing the delay of the legislature in enacting a national law, the Supreme Court of India in November 2001 stepped in to ban smoking in public places such as schools, libraries, railway waiting rooms and public transport throughout the country, and directed the Centre and States to take necessary action to ensure implementation of the ban (Murli Deora versus Union of India and Others 1999: civil no. 316/99).

The Plaint

A PIL was filed in the Supreme Court of India on 12 July 1999 by Murli Deora, a former member of the Indian Parliament. The following were cited as respondents:

1. Ministry of Health and Family Welfare
2. Ministry of Environment, Forests and Wildlife
3. Ministry of Food and Consumer Affairs
4. Ministry of Chemicals and Fertilizers
5. Ministry of Finance
6. Ministry of Agriculture
7. India Tobacco Company Limited
8. Vazir Sultan Tobacco Industries Limited
9. Godfrey Philips India Limited
10. Golden Tobacco Company Limited
11. Tobacco Institute of India

This writ petition drew attention to the infringement of the fundamental rights guaranteed under Articles 14, 19 and 21 of the Constitution of India and negation of the Directive Principles of State Policy articulated in Article 39(e) and Article 47 of the Constitution. The relevant Articles are as follows:

- Article 14: Equality before law...
- Article 19: Protection of certain rights regarding the freedom of speech, etc...

The rights protected under this article include the right to practise any profession or to carry on any occupation, trade or business (Article 19[1]g). However, sub-clause (6) of Article 19 states in connection with the right specified in Article 19 (1) (g) that nothing in sub-clause (g) shall affect the operation of any existing law in so far as it imposes, or prevents the state from making any law imposing, in the interest of the general public, reasonable restrictions on the exercise of the right conferred by the said sub-clause.

- Article 21: Protection of life and personal liberty except according to the procedure established by law...No person shall be deprived of his life or personal liberty except according to the procedure established by law.
- Article 39 (e): Certain principles of policy to be followed by the state...that the health and strength of workers, men and women, and the tender age of children are not abused and that citizens are not forced by economic necessity to enter avocations unsuited to their age or strength.
- Article 47: Duty of the state to raise the level of nutrition and the standard of living and to improve public health...The state shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties, and in particular the state shall endeavour to bring about prohibition of the consumption, except for medical purposes, of intoxicating drinks and of drugs which are injurious to health.

The petitioner stated that he was compelled to file the PIL in public interest, on account of inaction of the State in regulating the use of tobacco. He stated his intention to agitate on behalf of the silent masses that fall victim to the silent killer. The petition threw light upon the hazards of tobacco use and listed the harmful chemicals contained in tobacco smoke. It also highlighted the connection between deadly diseases such as cancer and the use of tobacco. To elucidate this point, the petition relied upon several reports of the US Surgeon General.

The petition contended that tobacco consumption in India, in the form of cigarettes, increased from 21 million kg in 1951–1952 to 80 million kg in 1994–1995.The Indian youth had been severely affected by these changing trends, as result of which citizens were facing the threat of deadly diseases, thereby affecting the mortality rate. This contravenes the duty of the State to take measures to increase the level of nutrition and health and to improve the standard of living of the people. Moreover, the use of tobacco has given birth to another category of smokers, namely, second-hand smokers. Thousands of non-smokers are being affected by the smoke in the atmosphere causing the diseases and disorders that a smoker faces, for no fault of theirs. This is a gross violation of the right to life guaranteed by the Constitution, for the life of these innocent victims is taken away without the procedure established by law. Such gross violation of rights also amounts to 'public nuisance', for the obvious reason that while a smoker smokes out of his own volition, a second-hand smoker is compelled to do the same and face the threats of smoking without his consent and free will.

The petition further contended that the only legislation that was present in the country at that time, namely the Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975 had failed considerably in achieving the objective, which is self-evident in the title of the Act. It merely provides a mild specified warning that 'cigarette smoking is injurious to health', which is grossly inadequate in the light of the harmful effects of tobacco smoking. The petitioner contended that the Act had completely failed to regulate advertisements promoting and glamourizing cigarette smoking and thereby made no serious effort to stop the tobacco industry from shamelessly flaunting their products through every possible form of the media.

The petition also sought to compel the legislature to categorize the business of manufacturing cigarettes as a noxious trade since it affects the health and well-being of the citizens of this

country, under Article 19 (1) (g), thereby subjecting it to the restrictions that the State can impose on such trade under Article 19 (6). This was linked to the State's responsibility of improving the standard of living and the health of the citizens. The petition also relied upon Article 39 (e), which makes it obligatory to prevent the entry of children of tender age into unsuitable avocations. In addition, several thousand children below the age of 18 are addicted to tobacco products on account of the easy availability and access.

The petitioner prayed to the judges adjudicating the matter for the following:

- Compensation should be paid by the tobacco companies based on their market share.
- A National Tobacco Policy should be framed, addressing the manufacture, sale, advertisement, distribution and consumption of tobacco products and the plan for a systematic shift from tobacco manufacturing to other industries ensuring minimal labour displacement.
- Smoking in all public places should be prohibited, including government buildings, community halls, stadiums and modes of transport.
- The statutory warning for tobacco products should be direct and sterner using appropriate language such as 'Smoking kills'.
- Further, such warning should be in the local language of the state where it is sold and it should be accompanied by a self-explanatory symbolic illustration of the warning.
- A minimum of 10% of the total surface area in any kind of advertising of tobacco products should be reserved for printing warnings as above. The warning labels should be in approved contrasting colours and prominent enough to attract attention.
- All packages containing tobacco products should be properly labelled and should indicate the content of nicotine and other addictive/carcinogenic agents.
- The advertisement of tobacco products should be restricted to a black text on a white background except for advertising in places where entry is restricted to adults only.
- Companies manufacturing and selling tobacco products should be prohibited from producing or selling or distributing all non-tobacco merchandise including caps, jackets, playing cards, glasses or bags, etc. bearing their logo or slogan, or selling the message of a tobacco brand.

Tobacco industry's defence

Cigarette manufacturing companies, which figured among the main respondents, however, denied the harmful effects of smoking and pleaded that, in any event, the smoker voluntarily assumes the risk of smoking. The evidence on second-hand smoking, statistical estimates of tobacco-related health burdens and the efficacy of a ban on advertisements were strongly contested by the respondents. To answer some of the other issues, the companies argued that smoking on all domestic flights is disallowed, availability and sale of cigarettes on the complete railway network including inside the trains and on platforms has been banned and restrictions have also been brought in under the Cinematograph Act which prohibits advertisements encouraging smoking. They contended that these measures were adequate to meet the requirements of tobacco control and that no further regulations were required.

Interim judgment

In an interim order passed on 2 November 2001, the Supreme Court of India prohibited smoking in public places and issued directions to the Central and State Governments, and the Union Territories to take effective steps to ensure the prohibition of smoking in the following places: auditoriums, hospital buildings, educational institutions, libraries, court buildings, public offices and public conveyances including railways.

The order stated that, '..it would be in the interest of the citizens to prohibit the smoking in public places till the statutory provision is

made and implemented by legislative enactment. The persons not indulging in smoking cannot be compelled to or subjected to passive smoking on account of acts of the smokers.'

Thereafter, the Central and the State Governments were required to file their replies in the nature of affidavits to bring to the notice of the Court the steps undertaken by them to publicize and fulfil the order.

This decision, a landmark in anti-tobacco jurisprudence, reaffirmed the fundamental right of the public to protection against disease and to the right to a healthy life and clean and wholesome environment, as provided in Article 21 of the Constitution of India. While the petitioner's claim for compensation of Rs 500 billion from tobacco companies was not addressed, the Court did order the Central Government to issue directives to ban smoking in public places. Several of the demands made by the petitioner have been met in The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003, enacted by Parliament in April 2003.

The Supreme Court upholds the ban on toothpastes and toothpowders that contain tobacco as an additive

The Government of India, through notification No. GSR-443(E) dated 30 April 1992, prohibited the manufacture and sale of toothpastes/toothpowders containing tobacco. A legal challenge was mounted by the industry on the ground that it adversely affects the fundamental right of a citizen to carry on trade, business or profession of his/her choice. This case (Laxmikant versus Union of India and others; case 739 of 1997) was decided by the Supreme Court in favour of the government. The ban was upheld by the Supreme Court, which ruled that 'the International Conference held in collaboration with WHO was of the opinion that the ban on use of tobacco in toothpaste and toothpowder should totally be imposed since it is prone to cancer. Under these circumstances, the view taken by the Government of India imposing total prohibition on the use of tobacco in the preparation of toothpowder and toothpaste is well justified in the public interest covered by Article 19 (6) of the Constitution, though it offends the right to carry on trade guaranteed under Article 19 (1) of the Constitution. The imposition of total ban is in the public interest.'

Consumer complaint against a contest organized by a tobacco company fails in the period when tobacco advertising was still legal

Details of this case (VOICE versus ITC) are described in Section 6.4.

The contest was intended for married couples of Indian nationality residing in India. One of the partners had to be a cigarette smoker. Pictures of the prize-winning couples, photographed in glamorous locations, were subsequently advertised widely in the print media as being 'Made For Each Other'. This was accompanied by a picture of a Wills cigarette, with a caption indicating that the tobacco in the cigarette and the filter were also made for each other.

The Voluntary Organization in Interest of Consumer Education (VOICE) filed a complaint in 1984 against the Indian Tobacco Company (ITC), with the Monopolies and Restrictive Trade Practices Commission (MRTPC). The tobacco company was accused of:

- Devising the contest 'to promote cigarette smoking and to promote its business interest'.
- Promoting 'the habit of cigarette smoking which is ex-facie injurious to public health...that the format of the impugned advertisement has been so devised to show a silhouette of a male and a female facing each other with a pack of Wills cigarettes in one corner, as to suggest that they will become

more likeable to each other and to outsiders if they smoke Wills Filter Tipped'.

- Associating the words 'Made For Each Other' with the Wills filter cigarette whose 'filter and tobacco are perfectly matched'. In doing so it is implied that Wills is the best cigarette.
- Using the contest to associate cigarette smoking with conjugal harmony, smartness, beauty, etc. and bestowing dignity and respectability on the act of smoking.

After several years of litigation, the MRTPC struck down the petition on the ground that no case was made out for action against the tobacco company since advertisements of tobacco products were still legal in the print media. An appeal by VOICE was rejected by the Supreme Court of India, on the same grounds. ITC, however, discontinued the contest. With the legal ban on all forms of advertising coming into force from 1 May 2004, the contention of VOICE stood vindicated, despite the initial legal setback.

Voluntary Health Association of India seeks a ban on the sponsorship of cricket

In 1999 a petition was filed before the High Court of Delhi by the Voluntary Health Association of India, raising the issue of surrogate advertising by cigarette manufacturing companies by way of sponsorship of sports events as part of their advertisement campaigns. Specifically, a ban was sought on the sponsorship of the Indian cricket team by the Wills brand of cigarettes manufactured by ITC. The appearance of the Wills logo on the sports apparel worn by the cricketers facilitated the repeated telecasting of that logo to millions of viewers. The respondents were the Union of India (Ministry of Health and Family Welfare, and Ministry of Information and Broadcasting), Board of Control for Cricket in India, Doordarshan (the national television corporation) and ITC. During the pendency of this petition, an affidavit was filed on behalf of Union of India to the effect that recently a bill was introduced in the Parliament styled as the Cigarette and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Bill, 2001. The Bill proposed a ban on all forms of direct and indirect advertising of tobacco. In view of this, the Court decided to discontinue the consideration of this petition. Even prior to the passage of the Bill in the Parliament, ITC voluntarily withdrew its sponsorship of the Indian cricket team in 2001.

SC lifts ban on *gutka* sale by States, says Central Government should bring law

As detailed in the section on Legislation and Enforcement (Section 6.1), some states imposed a ban on the sale of *gutka* (chewing tobacco, sold in pouches) during recent years. This was done under Section 7 (4) of the Prevention of Food Adulteration Act, 1954, since orally consumed tobacco is classified as a 'food product'. Section 7 (4) of the Act states that nobody can make or sell 'any article of food, the sale of which is for the time being prohibited by the Food Health Authority in the interest of public health'. In 2002, Maharashtra and other states invoked this provision to ban *gutka* and *paan masala*. As the Food Health Authority mentioned in the Act is the Director General of the Medical and Health Services of each state, such a ban could be imposed by an executive order. Those states also put a time limit on the ban—for instance, five years in Maharashtra—as Section 7 (4) mentions a prohibition being in force 'for the time being'.

The manufacturers of g*utka* (sold under several trade names) challenged this ban on several grounds. They were especially aggrieved that such a ban was imposed on oral tobacco while smoked tobacco products were permitted for sale. Furthermore, the ban was imposed only in some parts of India while the same products could be sold elsewhere in the country.

Upholding the challenge filed by manufacturers, a bench of the Supreme Court of India ruled, on 2 August 2004, that the provision cited by the states concerned did not authorize them to prohibit *gutka* or *paan masala*. The judgment held that under Section 23 of the same Act, the Centre alone was vested with the power to ban these products. One of the 14 powers conferred on the Centre by Section 23 is to issue a notification 'prohibiting the sale or defining the conditions of sale or any substance, which may be injurious to health when used as food'. Further, Section 24 of the Act makes it clear that a state's rule-making power is limited to 'matters not falling within the purview of Section 23'. In other words, the law forbids States to assume powers that are entrusted to the Centre. The Supreme Court said that given the clear demarcation of powers, the States could not derive any power to ban *gutka* or *paan masala* from Section 7 (4) of the Prevention of Food Adulteration Act, 1954.

This judgment does not, in any way, endorse the safety of *gutka* but merely emphasizes that the Central Government alone can issue orders imposing such a ban, in matters where the primacy of power rests with it. It is, therefore, now a matter which needs to be considered by the Central Government.

Class Action Suit for damages for victims of *gutka* (chewing tobacco)

The Consumer Education and Research Society (CERS) has initiated a Class Action Suit for compensation on behalf of some patients with oral cancer, who developed the illness after being addicted to the chewing of *gutka*. This suit, filed at National Consumer Disputes Redressal Commission, New Delhi covers the following points:

- Inadequacy of the statutory warning
- Inherent damaging nature of tobacco
- Other harmful contents added to tobacco in *gutka*
- Effect of advertisement on uninformed, illiterate and minor persons
- Accessibility and affordability of chewing tobacco for minors
- Findings of medical research establishing multifold increase in probability of cancer for users of tobacco
- Addictive/habit-forming nature of tobacco
- Other ill-effects of tobacco on the general health of the user
- No enforcement of restrictions on sale of *gutka* in the vicinity of educational institutes and free sale and distribution of *gutka* near school gates.

The proceedings and outcome of this Class Action Suit are awaited.

6.3 LITIGATION, CONSUMER ACTION AND JUDICIAL VERDICTS

KEY MESSAGES

- The Indian judiciary adopted the innovative practice of 'Public Interest Litigation' (PIL) in the 1970s, wherein any individual or organization could approach the court seeking its intervention on a matter of public interest.
- Civil society groups, including consumer organizations, mounted legal challenges to the tobacco industry. These served to sensitize the government as well as the judiciary to the need for a comprehensive tobacco control legislation.
- Judicial activism has played a major role in providing impetus to the tobacco control legislation, both by directing the government to take much needed steps for tobacco control and by creating a climate of public support for such legislation.
- The High Court of Kerala in July 1999 issued a path-breaking judgment that banned smoking in public places in that state. On 2 November 2001, the Supreme Court of India banned smoking in public places and issued directions to the Union of India, the State Governments and the Union Territories to take necessary action to ensure implementation of the ban.
- The Government of India, through a notification issued in April, 1992, prohibited the manufacture and sale of toothpastes/toothpowders containing tobacco. Although a legal challenge was mounted by the industry, the Supreme Court decided in favour of the government.
- Some state governments imposed a ban on the sale of *gutka*. The manufacturers of *gutka* challenged this ban on several grounds. The Supreme Court of India ruled that the Central Government alone was vested with the power to ban these products.
- Laws related to liability and compensation have not yet evolved in India in relation to tobacco control.

6.4

Civil Society's Initiatives

As tobacco transnationals are continuously promoting their products globally, the government in each country is grappling with economic and political interests related to tobacco. At this time, the role of civil societies becomes pertinent as these groups advocate for regulating tobacco products, raising awareness among the masses, demanding regulation and litigating on other issues related to tobacco.

Many civil society leaders have taken initiatives, faced challenging opposition and yet achieved successful national health goals.[18] Civil society, which includes a wide range of social organizations such as civil society organizations (CSOs), non-governmental organizations (NGOs), private voluntary organizations (PVOs), plays a vital role as participants, collaborators, legitimizers and watchdogs to ensure effective policy implementation.[19] Recognizing the importance of civil society's contribution to the health sector, the World Health Organization (WHO) has established a Civil Society Initiative (CSI) to formalize the partnership of working together towards achievement of the health goals in both developed and developing countries.[18,20]

India has a long history of civil society involvement. The NGO sector became more formal and socially recognized in the 1980s.[21] Even after fifty years of the democratic welfare system, inequalities and disparities still persist in India. To minimize inequalities in the health sector so that health service distribution could be promoted equitably, the Indian National Health Policy (NHP), 2002 recognized the significant contribution of NGOs and other civil society institutions in making health services available to the Indian community. To utilize their high motivational skills and maximize their contribution, the current NHP statement directs that 10% of the budget of all disease control programmes should be given exclusively to these institutions.[22]

In India, many local, national and international network of civil societies are working towards comprehensive tobacco control, either in collaboration with the national government or independently in the areas of health education, health promotion, community outreach services, advocacy, litigation, legislation enforcement, tobacco cessation clinic services, resource mobilization, etc. Since the past two decades, Indian civil societies have been working towards tobacco control. During the past few years, they have played a major leadership role in proposing and advocating for a comprehensive tobacco control policy in the country. The activities of CSI in India range from disseminating awareness in the society through various health education and health promotion strategies; distributing, designing and developing anti-tobacco information, education and communication and IEC material; producing audiovisual health education and health advocacy material; supporting WHO's Framework Convention on Tobacco Control (FCTC) and the Indian Tobacco Control Bill to forming an advocacy forum for tobacco control.

NGOs in India have played a crucial role in creating a supportive environment for tobacco control. This has been achieved by years of effort in community mobilization and advocacy with policy-makers and the media. The ban on smoking in public places enforced in 1990 was a result of such NGO action which set the country's judiciary thinking about the protection of non-smokers. In fact, many of the tobacco control policies have been framed by the government on the basis of inputs from NGOs and are based on the results of studies conducted by medical institutes, NGOs, anti-tobacco groups and public interest litigations (PILs).

Action by civil society groups for tobacco control originated initially from organized groups of health professionals and later involved other

segments of the society. One of the early groups to begin active public health campaigning was the Goa Cancer Society established by the Late Dr S.G. Vaidya, a cancer surgeon. In the mid-1980s, health professionals at the All India Institute of Medical Sciences (AIIMS) established the Health or Tobacco (HOT) group. They, in conjunction with the Young Men's Christian Association (YMCA) organized a national consultation for networking of civil society groups working for tobacco control. This meeting, held at New Delhi in April 1987, led subsequently to the formation of ACTION (Action Against Tobacco: Indian Organizations Network). Another network that was established in 1990s was NOTE (National Organization for Tobacco Eradication). Due to lack of financial resources and paucity of full-time committed staff, these networks did not achieve much success in coordinating nationwide efforts for tobacco control. The individual organizations, comprising health professionals, consumer activists, youth groups, journalists, etc. however, continued their efforts to mobilize public and policy-makers' opinion in favour of tobacco control.

Impact of conferences involving NGOs

Two large meetings in January 1990 in Bombay (now Mumbai) and in July 1991 in New Delhi, involving the active participation of concerned health professionals, suggested effective recommendations to the Government of India for a comprehensive tobacco control programme and legislations. Civil society organizations were active participants in these two meetings. It was during these two meetings that all aspects of tobacco control were critically looked into and recommendations made on public education, legislation and regulation.[23,24] Other advocacy efforts undertaken by NGOs have been well-informed signature campaigns to draw the government's attention to important issues related to tobacco control in India. In 1999, school students of Delhi under the auspices of the NGO—Health Related Information Dissemination Amongst Youth (HRIDAY)—collected 25,000 signatures and submitted these to the Prime Minister of India, along with an appeal to impose a comprehensive ban on all forms of tobacco advertising.[25]

Role of consumer groups

Many legal cases related to tobacco control have been filed by individuals and NGOs in India. Some of them have positively influenced tobacco control policies. Consumer groups have played a key role in strengthening recommendations to the government on various issues related to tobacco control. One such issue was the recommendation for a ban on *gutka* (chewing tobacco) in 1999. A convention of consumer organizations and Indian NGOs was held on 2 November 1999 in New Delhi, wherein the participants called upon the Indian Group of Ministries constituted for imposing a ban on chewing tobacco products and advocated for the ban.

In 1999, another consumer group, Consumer Education and Research Society (CERS) filed a PIL (No. 7930/1999) against the Government of India, the Government of Gujarat and the manufacturers of tobacco products appealing for the court to (i) ban the sale of all tobacco products to minors; (ii) direct the authorities to make health education on tobacco hazards compulsory for children and the youth; and (iii) conduct public campaigns against the use of tobacco products.

Coalition of NGOs

Nine national NGOs got together in 2001 to form an all-India coalition called the Advocacy Forum for Tobacco Control (AFTC). This coalition includes experts from the field of public health, research scientists, health professionals and officers representing various Indian NGOs. AFTC member organizations include Cancer Patients Aid Association (CPAA), Consumer Education and Research Centre (CERC), HRIDAY, Salaam Bombay Foundation, Rajasthan Cancer Foundation, ASHA, Voluntary

Health Association of India (VHAI), Action Council Against Tobacco (ACT)-India and Tata Memorial Hospital. AFTC actively advocated with the Parliamentarians and supported the Ministry of Health and Family Welfare (MOHFW), when the Indian Tobacco Control Bill was being debated in Parliament during April 2003. The Bill got clearance from both the houses of Parliament and became an Act with presidential assent on 18 May 2003, which is a landmark in the history of Indian tobacco control efforts.

An advocacy plan was designed and implemented to target key Members of Parliament (MPs) with informative messages that clarified the benefits of having such a law in India. Partners involved in this campaign were youth groups, media people, associations of health professionals, economists, consumer organizations and NGOs working in the field of health. Press meetings, newspaper articles, television interviews, letters to MPs along with informative message cards created a very conducive environment for this Bill to get clearance from Parliament. The efforts of the AFTC and its leading advocates were cited by MPs during the debate on the Bill.

Indian civil society's role in global tobacco control activities

Globally, CSOs have played an exemplary role in the Inter-Government Negotiating Body (INB) meetings of the FCTC. WHO's FCTC emphasizes, in its preamble, about 'the special contribution of non-governmental organizations and other members of civil society not affiliated with the tobacco industry, including health professional bodies, women's, youth, environmental and consumer groups, academic and health care institutions, to tobacco control efforts nationally and internationally and the vital importance of their participation in national and international tobacco control efforts'.

Similarly, the WHO Tobacco Free Initiative's (TFI) 'Tobacco kills—don't be duped' global media and NGO advocacy campaign was launched to support the FCTC. In this campaign, NGOs from 30 countries, including India, helped WHO to expose the truth about tobacco, and tobacco company campaigns and secret strategies. The success of 'Tobacco kills—don't be duped' initiated a new NGO project called 'Channelling the outrage'.[20]

Indian NGOs and the Framework Convention Alliance

The Framework Convention Alliance (FCA) is an international alliance of NGOs committed to achieving an effective FCTC.[26] Seven Indian NGOs and institutions are members of the FCA. These include: ACT-India, Association for Consumers Action on Safety and Health (ACASH), Cancer Institute, Community Health Cell, CERC, HRIDAY and School of Preventative Oncology, Patna.

NGOs and the FCTC

In December 2001, 24 Indian NGOs reiterated their support to the Jakarta and Thimphu Declarations on the FCTC and during the FCTC negotiations submitted their request to the INB to ensure that the final negotiated text of these conventions prioritize public health over other issues. They also urged the government to increase tobacco taxes to create a health fund, impose a ban on all forms of tobacco advertising, encourage measures to protect the public from exposure to tobacco smoke and appealed to the international community to ensure appropriate curbs on the smuggling of tobacco products.

Capacity-building of NGOs

The WHO, through the MOHFW, collaborates with Indian NGOs in supporting a wide array of tobacco control activities in India, ranging from awareness promotion among the masses to advocacy for a stronger policy on tobacco control and facilitating cessation efforts.

The performance of many Indian NGOs has been recognized by the WHO for their exemplary work in tobacco control. HRIDAY was awarded the WHO Tobacco Free World Award for the year 2002 and another NGO—Crusade Against Tobacco (CAT)—received this award for the year 2003.

Capacity-building of NGOs has been recognized as an important area and included in the planning for the WHO country budget for TFI in India. To ensure the active participation of NGOs in tobacco control activities in each state, support has been extended to various schools and community-based interventions in urban, rural, tribal areas as well as slums and marginalized populations.

The MOHFW is emphasizing on capacity-building at each state level by:

- Initiation of four pilot United Nations Fund (UNF) projects for tobacco control in India, through Indian NGOs. These are:
  - —Development of a model school intervention in India through HRIDAY, New Delhi
  - —Strengthening regulatory measures through VOICE (Voluntary Organization in Interest of Consumer Education), New Delhi
  - —NGO competition for innovative solutions against youth smoking through VHAI, New Delhi
  - —Sensitization meeting for Parliamentarians and MLAs at the state level on tobacco control
- Extending support to VHAI in organizing a sensitization workshop for its state partners (State Voluntary Health Associations [SVHAs]).

A detailed report of a few NGOs in India is provided in Table 6.5.

Table 6.5 Efforts made by NGOs in India for tobacco control

NGO and website	Establishment and location	Activity profile	Networking with other NGOs and GOs	Key focus area or strengths
Action Council Against Tobacco (ACT)-India www.act_india.org	Functional since 1991 Registered since 1993 (Mumbai, Maharashtra)	• **Health education activities:** Cancer awareness and education programmes for schoolchildren, school personnel and college students were conducted. Awareness in the community regarding the ill-effects of tobacco. Exhibition on the ill-effects of tobacco, opportunistic screening camps in the community for tobacco-related cancers and radio talk shows on the ill-effects of tobacco and tobacco cessation. Training workshops on tobacco control for NGOs, media personnel and health care providers were conducted. • **Advocacy programmes/efforts:** ACT-India was actively involved in framing and lobbying for the Tobacco Control Bill in Parliament and lobbying for signing and ratification of the FCTC by the Government of India. Acted as a watchdog through monitoring of advertisement ban. Three programmes for fellows in tobacco control leadership were organized to train and develop a large number of tobacco control advocacy leaders in India and the South-East Asia region of WHO. A strategy planning workshop for Advocacy Forum for Tobacco Control (AFTC) was conducted. • **Litigation:** Provided scientific support to individuals and organizations fighting the tobacco menace. For example, support was provided to FDA Minister Mr Anil Deshmukh for formulation of a *gutka* control law in Maharashtra	Active collaboration with other organizations and providing support in terms of training, literature, educational material	Health education and training on advocacy for tobacco control

Table 6.5 (*cont.*) Efforts made by NGOs in India for tobacco control

NGO and website	Establishment and location	Activity profile	Networking with other NGOs and GOs	Key focus area or strengths
		and for responding to the writ petition filed by the *gutka* manufacturer against the law. Support was provided to Mr Murali Deora for arguing in favour of a public interest litigation (PIL) filed by him and others in the Supreme Court of India for a complete ban on smoking in public places. • **Focused campaigns:** The Global Youth Tobacco Survey (GYTS), Global School Personnel Survey (GSPS) and Global Medical Doctors Survey (GMDS) were conducted to study the knowledge, attitude and practices in relation to tobacco use. Special focus programmes were held to promote health awareness and screening for tobacco-related cancers. Clinic- and community-based tobacco cessation activities were initiated. Training sessions were organized for teachers and school health personnel of municipal corporations, NGOs, and medical officers of municipal corporations, State and Central Governments and public sector undertakings. • **World No Tobacco Day (WNTD) activities:** Exhibitions were organized at major railway stations, bus depots in Mumbai to create awareness and educate the masses about the ill-effects of tobacco. Radio and TV talk shows on tobacco and its ill-effects were aired. Free health check-up was provided for tobacco users. Tobacco-related messages were put on buses and bus shelters. Painting competitions were organized for schoolchildren on the theme of tobacco. Pamphlets and posters on tobacco and cancers were distributed. Articles were published in leading newspapers on tobacco cessation and the ill-effects of tobacco.		
Consumer Education and Research Centre (CERC)	Functional since 1978 (Ahmedabad, Gujarat)	• **Health education activities:** Efforts were made to educate school and college students about the ill-effects of tobacco products. • **Advocacy programme/efforts:** Supported AFTC's efforts along with other NGOs during the tabling of the Indian Tobacco Control Act. • **Litigation:** A petition was filed in the High Court of Gujarat related to treatment of cancer patients recommending compensation for patients with oral cancer. • **Research:** A survey was conducted among tobacco users (students, cancer patients and general users) in Ahemedabad city in India. • **Focused campaigns:** A tobacco cessation centre was started to prevent and control tobacco use.	Gujarat Cancer Society, HRIDAY, Gujarat Cancer Research Institute	Consumer group action against tobacco use
Cancer Patients Aid Association http://www.cpaaindia.org	Functional since 1971 Registered since 1971 (Mumbai, Maharashtra)	• **Health education activities:** Awareness lectures in schools, colleges, mills, jails, factories, offices and community welfare centres. Annually, 15,000 people are screened in Mumbai and counselled for tobacco cessation. An audio–video presentation was organized with Bollywood actors. Anti-tobacco TV advertisements were aired on state television channels. • **Advocacy programme/efforts:** Lobbying with the government through the National Tobacco Control Coalition for tougher tobacco control laws. A general public signature campaign was organized to appeal to	Advocay Forum for Tobacco Control, organizations working in the area of cancer prevention, Bollywood stars	Health education, screening cancer patients and counselling, advocacy

Table 6.5 (*cont.*) Efforts made by NGOs in India for tobacco control

NGO and website	Establishment and location	Activity profile	Networking with other NGOs and GOs	Key focus area or strengths
		the Health Minister to put health warnings on tobacco products in 2004. • **Focused campaigns:** Organized a tobacco-free sports campaign, smoke-free workplace campaign and tobacco-free films and fashion campaign. • **WNTD activity:** Since 1997, WNTD was observed in accordance with WHO themes. Free cancer screening and training for community groups were provided, and a marathon organized. • **Countering the industry:** Letters were sent to all jury members against social events sponsored by tobacco companies. Letters were sent to film stars and the models who modelled for the Red & White cigarette advertisement.		
Crusade Against Tobacco (CAT) —a branch of the Neil Charitable Trust	Registered since 1999 (Mumbai, Maharashtra)	• **Health education activities:** Free literature on the ill-effects of tobacco in local languages was distributed to municipal schoolchildren in Mumbai. CDs showing cancer patients are given to all the schools. • **Advocacy programme/efforts:** Extends support to the Maharashtra Government in their efforts to ban the sale of *gutka*, and organizes talks by film and TV celebrities in schools. Advocacy with the State Government to notify the Tobacco Act, and with the State/Central Government/Information and Broadcasting Ministry to stop the advertisement of 'Marlboro' appearing in TV channels/important newspapers in spite of a ban on advertisement. Advocacy with the State Government/ Central Government to insert an entire chapter on tobacco in the school syllabus. Signature campaigns among youth to ban tobacco completely. • **Litigation:** Nil • **Focused campaigns:** Asking the Maharashtra Government and the Bombay Municipal Corporation to come out with a circular and ban smoking and chewing tobacco. Campaigns with schoolchildren and Members of Parliament in requesting a ban on the sale of *gutka* and *paan masala* all over India. Take the help of film stars/TV stars, TV channels to promote tobacco control, motivating schoolchildren to help their parents in quitting tobacco and rewarding successful cases by arranging a meeting with a celebrity. • **WNTD activity:** Collaborate with members of the film fraternity every year since 2000 in disseminating anti-tobacco messages on WNTD. • **Counter-activity against tactics of the tobacco industry and strategies:** Just as the tobacco industry is using models to promote the use of tobacco through advertisement, CAT is using actors, actresses, models and TV stars to counteract the effects of advertisements on young minds.	Tata Memorial Hospital/State Government/ Bombay Municipal Corporation	Advocacy, health education
Generation Saviour Association (GSA)	Functional since 1996 Registered since 1997 (Mohali, Punjab)	• **Health education activities:** Health awareness camps in the villages and colonies of Mohali and Chandigarh in 2000–2003. Free literature in the local languages on the ill-effects of tobacco distributed among people in the villages and colonies of Mohali, Chandigarh, Patiala,	Officers from the district Police Department were involved in school-based activities	Health awareness

Table 6.5 (*cont.*) Efforts made by NGOs in India for tobacco control

NGO and website	Establishment and location	Activity profile	Networking with other NGOs and GOs	Key focus area or strengths
		Ropar, and Fatehgarh Sahib in 1997–2003. Essay, spot painting, and poster-making competitions among schoolchildren in 1997–2003. • **Litigation:** Filed a PIL in 1996 in Punjab and Haryana High Court to ban smoking in public places. • **Focused campaigns:** Banning smoking in Mohali club and its bar was successfully achieved and the Sub-Divisional Magistrate's office premises made smoke free. • **WNTD activity:** Released an annual souvenir on the tobacco control activities of the GSA from 1996 to 2003. Media sensitization was done to spread messages against tobacco. Cultural programmes such as talks and a play organized by schoolchildren on the ill-effects of tobacco were conducted in 1996–2003. • **Counter-activity against tobacco industry tactics and strategies:** Screening of films and advertisements highlighting the ill-effects of tobacco use were shown in different schools in Punjab to counter the efforts of the tobacco industry and de-glamourize the use of tobacco.		
Green Motherland www.greenmotherland.info	Functional since 1995 (Chennai, Tamil Nadu)	• **Health education activities:** Published WHO tobacco facts in local newspapers to create awareness on the evils of smoking among the public. Awareness programme on the hazardous effects of smoking was organized in schools/colleges. • **Advocacy programme/efforts:** An advocacy effort was successfully made through 20 MLA of the Pasumai Thaayagam in the Tamil Nadu Legislative Assembly to ban smoking in public places. • **Focused campaigns:** A campaign against the film industry was made through sending individual letters to film personalities by the president of Pasumai Thaayagam. Letter campaigns in newspapers were carried out to sensitize film actors, directors and producers. • **WNTD activity:** Since 1996, WNTD activities are being carried out through poster and sticker campaigns on evils of smoking. A hoarding was put up with anti-tobacco slogans in the heart of Chennai city in 2002. Demonstrations were organized all over Tamil Nadu in 2003 demanding tobacco-free Tamil movies. • **Countering the industry:** Repeated appeals have been made to the concerned people of organizations such as the film and fashion industries about curbing tobacco promotion through films.	Nil	Health awareness and advocacy
Health Related Information Dissemination Amongst Youth–Students Health Action Network (HRIDAY–SHAN) www.hriday-shan.org	Functional since 1992 Registered since 1999	• **Health education activities:** Involved in educating the youth and community around 300 schools and 10 colleges in Delhi. Expanded the programme of health awareness and tobacco control advocacy to 10 cities of India in 2003. Created a tobacco control education and advocacy curriculum for youth in India. • **Advocacy efforts:** Actively involved in advocating with policy-makers since 1998 and advocated with parliamentarians during April–May 2003 to ensure smooth passage of the Indian Tobacco Control Bill.	ASHA (Lucknow, UP); Task Force Advocacy Support Group (Ghonda, UP); Rajasthan Cancer Foundation (Jaipur, Rajasthan); Voluntary Health Association	Health awarencess and tobacco control advocacy among and by youth

Table 6.5 (*cont.*) Efforts made by NGOs in India for tobacco control

NGO and website	Establishment and location	Activity profile	Networking with other NGOs and GOs	Key focus area or strengths
		—Organized signature campaigns, appeals, press releases and articles in the media to support tobacco control policies. • **Research:** Testing the effectiveness of interventions related to tobacco control education and advocacy among the youth. —Conducted the Global Youth Tobacco Survey (GYTS) and Global School Personnel Survey (GSPS) in Delhi • **Focused campaign:** Tobacco control awareness and advocacy among youth by using innovative strategies such as the All India Student Parliament on Health in 2003. —Train teachers and students through workshops to implement a tobacco control curriculum in schools. • **Countering the industry:** IEC material is distributed (posters, postcards, films, fact sheets, etc.) to counteract tobacco promotion messages. —Newspaper articles and rebuttals were published in magazines and newspapers in response to industry arguments. • **WNTD activity:** Formed well-informed activist groups: Teacher Against Tobacco (TAT), Parents Against Tobacco (PAT) and Students Against Tobacco (SAT), which work together on the themes of WNTD every year. Signature campaigns and community outreach programmes were conducted, and films shown to create anti-tobacco norms and build an environment conducive for enforcing tobacco control legislation. Campaigns were organized for tobacco-free sports and fashion, and tobacco-free films shown.	(Bhubaneshwar, Orrisa); National Organization for Tobacco Eradication (NOTE)-INDIA (Panaji, Goa); Kerala Voluntary Health Services (Kottayam, Kerala); Academy for Nursing Studies and Women's Empowerment Research Studies (Hyderabad, Andhra Pradesh); Himachal Pradesh Voluntary Health Association (Shimla, Himachal Pradesh); Yuvak Pratisthan (Mumbai, Maharashtra)	
Health Action by People www.hapworld.org	Functional since 1993 Registered since 1993 (Thiruvanathapuram, Kerala)	• **Health education activities:** An anti-tobacco awareness campaign for schoolchildren, and an annual pledge against tobacco was taken by all primary and secondary schools. It acts as the nodal agency, coordinating the efforts of Tobacco Action Network (TAN)-India, an organization of the medical fraternity of India which includes 47 medical colleges from 9 Indian states. • **Advocacy programme/efforts:** Student Coalition Against Tobacco (SCAT) was formed in 2001. A signature campaign was organized in support of the Tobacco Control Bill, 2003. • **Focused campaigns:** Schoolchildren initiated a signature campaign against Wills sponsorships in 2000. • **WNTD activity:** Tobacco-free sports were organized in 2002. An exhibition was organized on 'Tobacco and health' in 2003. TAN was formed in 2003 among 25 medical colleges from all over India.		Tobacco control awareness among the youth
Indian Cancer Society	Functional since 1983 Registered since 1983 (Delhi)	• **Health education activities:** Awareness talks, discussions and film shows were organized over the years in Delhi-based schools and colleges. Annual training workshops were conducted for awareness on cancer. Internationally acclaimed anti-tobacco advertisements were adopted for use in India. • **Advocacy programme/efforts:** Presented suggestions	Rotary Club, Deepalaya, mobile creches, Prayas and Helpage	Cancer control education

Table 6.5 (*cont.*) Efforts made by NGOs in India for tobacco control

NGO and website	Establishment and location	Activity profile	Networking with other NGOs and GOs	Key focus area or strengths
		to the Rajya Sabha Advisory Committee on tobacco regulation. • **Focused campaigns:** A community anti-tobacco awareness project was implemented in the Delhi slums in 2000. • **WNTD activity:** Every year, street theatres (*nukkad natak*) are performed in many public places in Delhi such as Delhi Haat, in front of cinemas and slums. • **Countering the industry:** The Indian Cancer Society has written and spoken against duplicitous advertising by the tobacco industry and *gutka* manufacturers.		
Jan Akansha	(Hoshangabad, Madhya Pradesh)	• **Health education activities:** Community meetings are held along with display of IEC material. A tobacco awareness camp was organized in villages. Home visits were conducted to create awareness regarding tobacco among women. • **Advocacy programme/efforts:** Advocacy was carried out through women's groups against *gutka* sellers to curb *gutka* sale to children. • **Focused campaigns:** A signature campaign in schools was held to prevent the sale of tobacco products near schools. • **WNTD activity:** Schoolchildren organized a play for the villagers of Byavra. A public meeting was organized and people were informed that film personalities only smoke in films but they do not smoke in real life. • **Countering the industry:** The public was sensitized on the tobacco industry's tactics of promoting tobacco through films and film personalities.	Religious groups and National Service Scheme	Health education and counter-marketing
Kerala Voluntary Health Society (KVHS)	Registered since 1971 (Kerala)	• **Health education activities:** Anti-tobacco awareness conducted among college/school students and adolescents in the community during the period 2002–2004. Innovative folk arts programmes, poster slides, video spots and cartoon exhibitions performed to disseminate anti-tobacco message to the general public during the period the period. Anti-tobacco sensitization programme were conducted for media and police during the project period. • **Advocacy programme/efforts:** Advocacy activities were done among the Members of Parliament (MPs) from the state for the early passage of the Tobacco Bill in Parliament. State-level advocacy for the support of anti-tobacco bill in the Legislative Assembly. Advocacy with PRI members to impose ban of smokeless tobacco in their jurisdiction. Lobbying with media personnel to ensure their cooperation and support for anti-tobacco activities, and also increase the number of media column and programmes to propagate anti-tobacco message to the public. • **Focused campaigns:** KVHS collective efforts with other local NGOs imposed ban on the sale of smokeless tobacco in seven *panchayats* and two municipal areas in the Kottayam, Idukki and Ernakulam districts.		Health education, advocacy

Table 6.5 (*cont.*) Efforts made by NGOs in India for tobacco control

NGO and website	Establishment and location	Activity profile	Networking with other NGOs and GOs	Key focus area or strengths
		• **WNTD activity:** Observed WNTD, 2004 with activities such as poster exhibitions, anti-tobacco road show, seminar, public rally, burning of effigy, etc. • **Counter activity against tobacco industry tactics and strategies:** Convened press conferences to sensitize media personnel against tactics of the tobacco industry.		
National Organization for Tobacco Eradication (NOTE)-India	Functional since 1992 Registered since 1992 (Goa)	• **Health education activities:** Training programmes on tobacco control were held for academicians, students, National Swayam Sevak (NSS) students and *anganwadi* workers. Various audiovisual programmes were conducted in village *panchayats* and 30 schools and colleges on the harmful effects of tobacco use in 2003. Training on tobacco cessation clinical practice guidelines was conducted for 250 doctors. A training session was conducted for resource persons in the state education department to motivate them to incorporate tobacco lessons in the school curriculum. • **Advocacy programme/efforts:** A tobacco control advocacy training workshop was organized in 2001 for organizations working on tobacco control in India to make recommendations for the National Tobacco Control Act and FCTC. Mobilized student groups and NGOs were to influence MLAs to pass the 'Goa prohibition of smoking and spitting Act, 1997'. • **Focused campaigns:** Convinced the State Government to issue a notice in 2003 banning the sale, production, transportation and storage of *gutka*. • **WNTD activity:** A skit, exhibition, street marches, musical concerts and workshops were conducted in 2003. • **Counter-activity against tobacco industry tactics and strategies:** Revealed the tactics of the tobacco industry in a publication entitled *Tobacco Quit India*.	ACT-India, IMA-Goa, Lions Club, Rotary Club, women's group consumer protection organizations, VOICE, HRIDAY–SHAN, 12 tobacco cessation clinics	Awareness, advocacy, cessation trainings
People's Rural Education Movement (PREM)	Functional since 1994 Voluntary organization (Orissa and Andhra Pradesh)	• **Health education activities:** 'Say "NO" to Tobacco' campaign was organized by PREM sponsored by WHO in Gajapati District of Orissa state during November 2002–October 2003. The campaign undertook various activities throughout the year to spread awareness regarding tobacco use. PREM produced IEC material, organized block-, district- and *gram panchayat*-level awareness workshops and rallies. Awareness campaigns were conducted in select villages, schools and cultural performances and block-level health check-up camps were organized. • **Focused campaigns:** PREM initiated a campaign against the use of tobacco in Gajapati District in association with its network partner NGOs during November 2002.	Bapuji Gramya Kalyana Samiti (BGKS); Lower Income People Initiative for Community Action (LIPICA); Centre for People's Development (CPD), Agami Loka Kalyana Samiti, Margadarsi, Palli Vikash, Lokasamiti, Centre for Community Development (CCD)	Health education
Prayas	Functional since 1988 Registered since 1989 (Delhi, Bihar Gujarat and the US)	• **Health education activities:** A peer educators' training programme was organized by Prayas Health Services on the ill-effects of tobacco. Brochures and handbills were developed and distributed among the slum communities, with a special focus on adolescents.	VHAI, Indian Cancer Society, Heart Care Foundation of India	• Health education • Integrating with other health care

Table 6.5 (*cont.*) Efforts made by NGOs in India for tobacco control

NGO and website	Establishment and location	Activity profile	Networking with other NGOs and GOs	Key focus area or strengths
		Meetings and health talks to sensitize important stakeholders such as rickshaw pullers, community *pradhans*, Mahila Mandals and Purush Mandals. • **Advocacy programme/efforts:** Social advocacy rallies against tobacco in the community were held in 2003. A sensitization programme was held for police personnel and schoolchildren. —Media advocacy was carried out through talks by staff of Prayas on various TV channels. • **Focused campaigns:** An anti-tobacco skit was presented in the community, as well as a focused counselling session and this led to successful quitting of tobacco by several youth and adolescents in the community in 2003–2004. —Prayas Health Service organized a cricket match for street and slum children. The running commentary was used as a means to disseminate information on tobacco-related issues. • **WNTD activity:** Painting and elocution competitions were organized for various community and schoolchildren on the eve of WNTD (2003 and 2004) to sensitize the adolescent population regarding the hazardous consequences of tobacco consumption. A rally, skit, talks and oath-taking against tobacco were also organized. • **Counter activity against tobacco industry tactics and strategies:** Sensitized and educated *paan wallahs* (tobacco kiosk owners) within the targeted area to quit tobacco consumption themselves and also sensitized them to abide by the current anti-tobacco law.		programmes: Regular ENT check-up and treatment of TB through DOTS for children surffering from ailments related to tobacco consumption
Rajasthan Cancer Foundation (RCF)	Functional since 2002 Registered since 2002 (Jaipur, Rajasthan)	• **Health education activities:** Talks were delivered among sports personalities and health professionals on the ill-effects of tobacco and tobacco control in 2002. Meetings were conducted among school teachers and senior citizen's club members to encourage their participation in tobacco control activities in 2002. Workshops were organized among scout leaders, higher secondary school principals and headmasters in Jaipur in 2002 and 2003. A book *Tobacco itself* was published in 2003. • **Advocacy programme/efforts:** Advocacy talks on tobacco control were delivered to employees of public and private institutions in Jaipur in 2002 and 2003. An advocacy workshop was held on tobacco control and cessation among youth in 2002. To advocate the passage of the Tobacco Control Bill in the Indian Parliament, a TV scroll detailing the components of the national anti-tobacco bill was shown on the Bhasker TV channel in 2003. • **Research activities:** Surveys were carried out to assess the knowledge, attitudes, practices and patterns of tobacco use among adults and children. • **Focused campaign:** Tobacco cessation counselling sessions were held among employees of the Rajasthan Roadways and Transport Corporation; these have been very successful.	Rajasthan Roadways and Transport Corporation, Railways Path Canada, ACT-India, VHAI HRIDAY–SHAN	Awareness regarding tobacco control among the rural community

Table 6.5 (*cont.*) Efforts made by NGOs in India for tobacco control

NGO and website	Establishment and location	Activity profile	Networking with other NGOs and GOs	Key focus area or strengths
		• **WNTD activity:** TV and radio programmes, press conferences on tobacco control with the local media, public talks on tobacco control, slide shows and radio spots were organized in 2002–2003. Exhibitions on 'Tobacco-free Sports' and an 'Oath for Tobacco Avoidance' were organized by various sports personnel in 2002. A slide show was organized in 2003 on the theme 'Tobacco-free Films and Fashion'.		
Ramakrishna Mission	Varanasi, Uttar Pradesh	• **Health education activities:** A 30 minute multimedia presentation was developed in 2003 in Hindi, for conveying effective messages to educate school and college students, villagers, slum dwellers and patients to prevent tobacco use. • **WNTD activity:** Multimedia Health Education Series on 'tobocco use prevention' was launched in 2003. A press conference was organized to popularize the Multimedia Health Education Series for Varanasi and Mirjapur district of eastern Uttar Pradesh.	Nil	Health education
Swasthya	Functional since 2001 Registered since 2001 (Faridabad, Haryana)	• **Health education activities:** Two seminar-cum-exhibitions were organized in Bhopal among students and the community in 2001–2003. • **Advocacy programme/efforts:** In Faridabad, two advocacy activities were carried out: (i) to stop selling tobacco products by *khokas* (kiosks), and (ii) surrogate advertising on TV. • **Focused campaigns:** A campaign was held to prevent smoking in local trains and platforms. • **WNTD activity:** Awareness at public and private places was generated through posters and a sticker campaign. A road show was put on the main road of Faridabad; stickers saying 'Choose life not tobacco' were put on all vehicles passing on the road.	HRIDAY–SHAN NOTE-India, ACT-India, VOICE	Health education and awareness
Swami Vivekananda Youth Movement (SVYM) www.vivekamysore.com	Functional since 1984 Registered since 1984 (Mysore, Karnataka)	• **Health education activities:** Awareness was generated in the rural and tribal areas of Mysore district since 2003. Interactive sessions in schools, a health awareness rally in the community and audiovisual sessions among target groups such as women and youth, street plays in the community and group meetings were held. Tobacco awareness fairs were held for women, self-help groups were created in rural tribal areas, a health behaviour modification programme in the community focusing on the harmful effects of tobacco use and quitting tobacco habits were held. • **Advocacy programme/efforts:** An anti-tobacco sports event was organized in 2003, where ministers and politicians were invited and sensitized on tobacco facts and presented with an appeal for tobacco control. • **Focused campaigns:** A mobile health education programme was undertaken in 2003 targeting illiterate children and adolescents outside school. A rural bus campaign was initiated; the bus carrying health messages reached many villages which specifically targeted the youth.	Nil	Health awareness among rural and tribal audiences

Table 6.5 (*cont.*) Efforts made by NGOs in India for tobacco control

NGO and website	Establishment and location	Activity Profile	Networking with other NGOs and GOs	Key focus Area or strengths
		• **WNTD activity:** An awareness rally and a street play were organized by children in the community in 2003.		
Salaam Bombay Foundation	Functional since 1995 Registered since 2002 (Mumbai, Maharashtra)	• **Health education activities:** A Hindi skit was enacted to create awareness among the youth. Till date, 701 films have been shown to create awareness among children. Interactive tobacco awareness exhibitions were conducted in schools. The WHO designed anti-tobacco curriculum pre-tested in three schools in Mumbai. • **Advocacy programme/efforts:** A media campaign was held towards public support for a ban on *gutka* and *paan masala* in 2002 • **Focused campaigns:** *Gutka*-free Maharashtra state campaign and student signature campaign was organized in 2002 and 2003 • **WNTD activity:** A tobacco cessation clinic (TCC) was started for street children in 2003. • **Countering the industry:** Interactive tobacco awareness exhibitions were held to educate schoolchildren about the misleading advertising of the tobacco industry.	Advocacy Forum for Tobacco Control, Salaam Balak Trust	Awareness among the rural youth
Samadhan Samiti	Registered since 1991 Functional in UP	• **Health education activities:** Conducts regular discussion programmes, slide shows and on-the-spot help by TCC experts in schools/colleges/non-formal education centres for street and railway platform youth in Lucknow and neighbouring villages. Regular media sensitization efforts are made in Lucknow on various issues around tobacco control. National media coverage was galvanized and media workshops conducted in many places. A publication *Tobacco kills* which is in its 53rd issue, is brought out in Hindi and English, and involves the youth in editing and content sourcing. This publication also serves as an advocacy tool for the media and policy-makers. A number of leaflets were produced in Hindi and Urdu for community outreach programmes. The book *Rakh ke dher par* in Hindi on tobacco hazards was awarded national- and state-level awards in 1997 and 1998 for the best health education book. • **Advocacy programme/efforts:** Street youth and school/college students are involved in advocacy programmes. Candle marches were organized in the city to mobilize public opinion; leaflets and pamphlets were distributed, signature petition campaigns were held for the FCTC, Cigarettes and Other Tobacco Products Act and its implementation. Lobbying was done to get the UP Council House declare a tobacco-free zone in 2001, and on WNTD it was so declared. Public demonstrations were held against transnational tobacco companies demanding accountability and transparency. Relevant documentaries such as 'Making a killing' and 'Overcoming the odds' were screened at public places and institutions, including exclusive screening for the media. Over 20,000 signatures were collected against tobacco companies from people who want to hold	Government of UP, AFTC, INFACT, NATT, SF's, Tobacco Free Initiative, INGCAT, INWAT, Global Partnerships for Tobacco Control, HRIDAY–SHAN, ACT Mumbai, Salaam Mumbai, CPAA Mumbai and Pune, Ahmedabad's KCH, Indian Network of NGOs, National Alliance of People's Movements (NAPM), Majdoor Kisan Shakti Sangathan, ASHA, and many other groups	Health education

Table 6.5 (*cont.*) Efforts made by NGOs in India for tobacco control

NGO and website	Establishment and location	Activity profile	Networking with other NGOs and GOs	Key focus area or strengths
		them accountable for the havoc unleashed by tobacco in the past decades. The organization is proactively engaged in initiatives targeted towards sensitizing, mobilizing and building up multitier media support. • **Focused campaigns:** These included the Wills Lifestyle Store Boycott Campaign, Reach Out to People campaign: (4 days every month from 10 am to 5 pm at railway and bus stations), media campaigns, youth-based campaigns (Grow Without Tobacco theme events). • **WNTD activity:** Academy award-winning documentaries of the unit were screened (*Making a killing:* Philip Morris, *Kraft and Global Tobacco Addiction...* [30 minutes], *Overcoming the odds* [20 minutes]). • **Counter-activity against tobacco industry tactics and strategies:** A campaign was planned against the tobacco industry and its tactics and strategies with INFACT other allies on the Network for Accountability of Tobacco Transnationals (NATT). Discussions were marked by a session to de-mystify tobacco advertising, and peel off the glamour and lifestyle imagery. Symbolic 'fasts' were held in the city centre to oppose government measures to appease tobacco corporations. Editorials and op-eds were generated, authored by NGO team members focused against the tactics of tobacco transnational corporations. The Chief Editor of Delhi Press was honoured; he has refused tobacco advertisements, (direct, indirect and surrogate) and has set a strong precedence not to bow down to corporate pressures and stick to journalistic ethics and the media's social responsibility in June 2004.		
Society to Create Awareness towards Life and Environment (SCALE)	Functional since 2002 Registered since 2002 (New Delhi)	• **Health education activities:** SCALE organized a 'Tobacco Awareness and Control Programme' in its 45 adopted villages covering about 20,000 families in Bhimtal, Nainital District, Uttaranchal in 2003. • **Advocacy programmes:** Health camps were held in villages with the involvement of policy-makers (Governor of Uttaranchal and the District Magistrate) to deliver anti-tobacco messages. • **Focused campaigns:** Door-to-door campaigns using posters and pamphlets to advocate the ill-effects of tobacco usage were carried out in 45 villages. Documentaries against tobacco usage were shown. • **WNTD activity:** Health education with schoolchildren and the community are organized on every WNTD. • **Counter-activity against tobacco industry tactics and strategies:** SCALE had produced a documentary against tobacco, and created slogans to be used through children and women. SCALE proposes to set up a de-addiction clinic at Bhimtal. It gives employment preference to non-tobacco users.	Bharitya Adim Jati Sevak Sangh (BAJSS), WHO and Ministry of Health (MOH)	Prefer to route change through ownership of campaigns against tobacco usage

Table 6.5 (*cont.*) Efforts made by NGOs in India for tobacco control

NGO and website	Establishment and location	Activity profile	Networking with other NGOs and GOs	Key focus area or strengths
Vijaya	Functional since 1995 Registered since 1996 (Bhubaneswar, Orissa)	• **Health education activities:** Health awareness camps were held in schools, *Gram panchayats*, CBOs, self-help groups, NGOs in Jajpur district of Orissa in 2001–2003. Posters, literature, leaflets, banners, wall paintings bearing anti-tobacco messages were distributed in Jajpur district. Essay, wall paintings, poster and other competitions among schoolchildren were also organized. • **Advocacy programme/efforts:** Media advocacy at the *Gram panchayat*/Block/Districts and State level were organized in 2001–2003. Advocacy was done against tobacco consumption and smoking at public places such as railway stations and Airports • **Focused campaigns:** Smoking was banned in one *gram panchayat* and the area successfully retained as a 'Tobacco-free zone' with the help of vendor's sensitization. • **WNTD activity:** Media sensitization was done both at the state- and district level and cultural programmes such as street plays were organized about the ill-effects of tobacco.	Centre for Public Health and Environment Education (COPHEE, Jajpur); Government of Orissa; VHAI New Delhi, West Bengal Voluntary Health Association (WBVHA), Calcutta; Acharya Harihar Cancer Institute, Cuttack	Health awareness
Voluntary Health Association of India (VHAI)	Registered voluntary organization (New Delhi)	• **Health education activities:** VHAI began its tobacco control activities in 1986 focusing on schoolchildren in 60 public and government schools of Delhi. Activities conducted include talks on the dangers of tobacco and the tobacco industry's marketing strategies, essay writing and poster painting competitions. Later, schools in Gwalior, Varanasi, Guwahati and Dharamsala were also included with the support of VHAI's State branches. An innovative programme 'Leadership in Health' was conducted in collaboration with the 'Health or Tobacco' group of the All India Institute of Medical Sciences, Delhi. IEC materials: These included 'Touch me not' for schoolchildren on the tobacco issue and 'Radio DATE' (Drugs, Alcohol and Tobacco Education). • **Advocacy programme/efforts:** Since 1987, VHAI has been advocating very strongly for a comprehensive central tobacco act. Since 1995, VHAI advocated for tobacco sponsorship-free sports through writing letters to concerned personnel, press releases and letters to prominent MPs towards quick passage of the tobacco bill in Parliament. • **Litigation:** VHAI filed a PIL in 1998 in the Delhi High Court against the Board of Control for Cricket in India for advertising and promoting cigarette smoking among the youth. In 2001, ITC voluntarily withdrew its sponsorship of the Indian cricket team. The High Court then closed the case. • **WNTD activity:** Talks were organized in all state capitals, press releases and letters to health officials are sent for stricter controls on tobacco use in public. On 31 May 2004, with the support of the Ministry	27 State Voluntary Health Associations (SVHAs) and 3500 CSOs working on health and development in the country. In 1987, VHAI set up the first national network of NGOs and professionals on tobacco control called ACTION (Action to Combat Tobacco —Indian Organizations Network). VHAI networked with over 300 NGOs in the country for organizing 4 regional workshops on 'Innovative approaches to tobacco control' supported by the Ministry of Health and WHO. VHAI is presently part of the AFTC. All India Institute of Medical Sciences, Indian Council of Medical Research,	Health education, advocacy, litigation

Table 6.5 (*cont.*) Efforts made by NGOs in India for tobacco control

NGO and website	Establishment and location	Activity profile	Networking with other NGOs and GOs	Key focus area or strengths
		of Health and WHO, VHAI coordinated the observance of WNTD through its 27 state offices. Rallies, huge bonfires of tobacco products and burning of the effigy of the tobacco industry was done. In some states, a memorandum was also submitted to the Governor and and State Health Directors asking for effective implementation of the Central Tobacco Act and putting putting stricter curbs on tobacco use. • **Counter-activity against tobacco industry tactics and strategies:** VHAI took very strong objection to the Barista chain of restaurants for flouting the ban on public smoking. VHAI wrote a letter to Godfrey Philips expressing deep concern at hurting the sentiments of the people of Rajasthan, urging Godfrey Philips to immediately withdraw the 'Jaisalmer' re-launch campaign.	All India Radio and the Central Health Education Bureau	

6.4 CIVIL SOCIETY'S INITIATIVES

KEY MESSAGES

- Civil society organizations play an important role in tobacco control as they advocate for regulating tobacco products, raise awareness among the masses, demand regulation and litigate against other issues related to tobacco.
- Recognizing the importance of civil society's contribution in the health sector, the World Health Organization has established a Civil Society Initiative (CSI) to achieve health goals in both developed and developing countries.
- Nine national NGOs (2001) in India formed the Advocacy Forum for Tobacco Control (AFTC), which designed and implemented informative messages that clarified the benefits of having such a law in India to key Members of Parliament.
- Globally, civil society organizations have played an exemplary role in the Inter-Government Negotiating Body meetings of the FCTC. In December 2001, 24 Indian NGOs, reiterated their support to the Jakarta and Thimphu Declarations on the FCTC.
- The WHO recognized the contributions of many Indian NGOs with the 'WHO Tobacco Free World' award.

6.5

Tactics of the Tobacco Industry

It is now over four hundred years that tobacco took root in India. Since then it has permeated into all strata of Indian society. As in the West, cigarettes became popular during World Wars I and II in India. Even before the organized sector of cigarettes became established, traditional forms of tobacco consumption were popular.

Today, tobacco giants are shifting their focus from industrialized countries to developing countries and India is a prime target due to its one billion population, with about 250 million tobacco users and many more potential smokers. This section discusses an array of strategies employed by the tobacco industry for promoting tobacco products in India over time.

The British American Tobacco (BAT) has an Indian subsidiary by the name of Indian Tobacco Company (ITC) Ltd. The company controls about 76% of the entire cigarette market in India. It manufactures many of India's most popular cigarette brands, including Bristol, Scissors, Wills, Gold Flake and Capstan. The second largest manufacturer of cigarettes is Godfrey Philips India (GPI) Ltd. affiliated to the international player Philip Morris, which produces the brands Red & White, Jaisalmer and Cavenders. Vazir Sultan Tobacco (VST) Company, whose brands include Charminar, Charms and Vijay, is the third largest player in the Indian market. The fourth player is Golden Tobacco Company (GTC), owned by the Dalmia group which manufactures Indian as well as foreign brands of cigarettes. Among the foreign brands, Rothmans is one brand of cigarettes that has been manufactured by GTC. Indian brands such as Panama are under the flag of GTC. The top three companies account for over 90% of all cigarettes sold in India. *Beedi* and smokeless tobacco products form another huge segment of tobacco trade in India, which was earlier an unorganized sector but is now fast shaping up as an organized, corporate sector. Big producers of chewing tobacco products are Kothari Products and Dhariwal Industries. They hold a market share of 34.5% and 33.5%, respectively.[27]

BAT has a 31.7% ownership in ITC and 32% ownership in VST. Philip Morris has 36% ownership in GPI. The lucrative Indian market is of obvious interest to the tobacco industry, as voiced by its leaders.

> 'India is probably second (in terms of emerging markets that are making the biggest contributions to BAT's sales) after Brazil. It is a hundred billion sticks' market and we have a 70 % share. India represents our second market in volume terms. As living standards rise and people trade up from beedis the market could be enormous'.
>
> —BAT Chairman, Martin Broughton

> 'Our primary aim is to expand the market for cigarettes. We have the responsibility, being market leaders, to do so.'
>
> —K. Ramnath, CEO, ITC, 1997 quoted in Chris Glass 'The multinationals are coming' Tobacco Reporter, January 1997

In 2004, the Indian tobacco industry is a Rs 350,000 million industry. From agriculture to manufacture to retailing, it is a large and expanding business employing millions of people. The tobacco industry fights tooth and nail to avoid any tough legislation in India because of this huge money-spinning business and the potential of expanding this market to entrap the large and growing adolescent and young adult segments of the population.

Every year the tobacco industry spends billions of dollars all over the world on advertising, marketing and promotion of tobacco products. Recently disclosed industry documents (quoted

below) reveal that the companies have carefully studied the habits, tastes and desires of their potential customers—including women, children and other historically low-smoking groups—and used that research to develop products and marketing campaigns aimed at them.

> 'Younger adult smokers have been the critical factor in the growth and decline of every major brand and company over the last 50 years... Younger adult smokers are the only source of replacing smokers... If younger adults turn away from smoking, the industry must decline, just as a population which does not give birth will eventually dwindle.'
>
> —R.J. Reynolds Tobacco Company internal memorandum, 29 February 1984

> 'Today's teenager is tomorrow's potential regular customer, and the overwhelming majority of smokers first begin to smoke while still in their teens.... The smoking patterns of teenagers are particularly important to Philip Morris.'
>
> —Philip Morris report sent from researcher Myron E. Johnston to Robert B. Seligman, the then Vice President of research and development, 1981

Impact of tobacco advertisements

Tobacco advertising, in direct or indirect form, boosts consumption. A report prepared with the cooperation of the tobacco industry concludes that 'advertising was found to have a statistically significant impact on industry sales'. The tobacco industry commented that the rise in tobacco consumption in Greece was basically due to advertising.[28]

This has also been the pattern in India. A screening questionnaire used by the Panama brand in 1984 focused on studying the advertisements seen by respondents. The impact of tobacco advertising has been well researched in India as well, and has shown a direct correlation between advertising and the sale of tobacco products or the intention to use tobacco.

A study was conducted in 10 cities of India in which over 9000 students in the age group of 13–17 years were surveyed to assess the impact of the Wills World Cup cricket series sponsored by Wills in 1996. The results highlighted that 13% of the students felt a desire to smoke after watching this cricket series.[29] The effects of sponsoring the India–New Zealand cricket series in October–November 1995 by Wills on children's experimentation with tobacco was investigated in an earlier study. The results highlighted that, despite high levels of knowledge regarding the ill-effects of tobacco, cricket sponsorship by tobacco companies increased children's likelihood of experimenting with tobacco by creating false associations between smoking and sports.[30]

Both the World Health Organization (WHO) and World Bank recommend that countries prohibit all forms of tobacco advertising and promotion. Such bans, if adopted globally, could reduce the worldwide demand of tobacco by around 7%. Despite industry denials, the overwhelming majority of independent peer-reviewed studies show that tobacco advertising leads to an increase in its consumption.

Tobacco advertising in India

As per estimates in early 2004, tobacco advertising contributed Rs 3000–4000 million every year to the Rs 80,000 million Indian advertising industry, before the ban on advertising was imposed with the enforcement of the Cigarette and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003. Projections indicate that, ironically, the cigarette advertising budget in India has increased after enforcement of this Act. Prior to enforcement of the ban, the cigarette advertising budget was close to Rs 3000 million per year with ITC leading the spending. It is estimated that 12 months after the ban is enforced, the cigarette industry would have spent around Rs 3500 million on cigarette advertising. The reason for this increase in

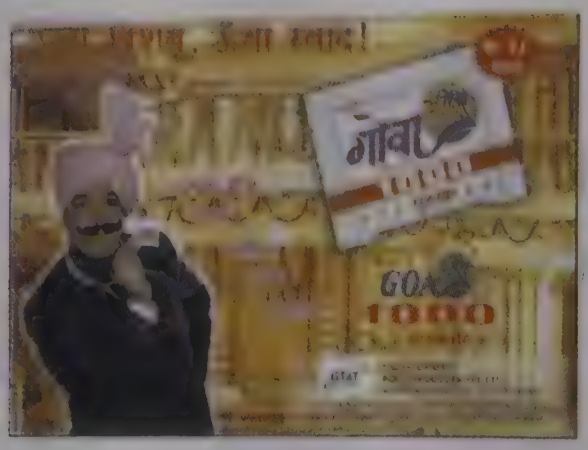


Fig. 6.2a Advertisement of a *gutka* brand associated with a marriage ceremony



Fig. 6.2b Advertisement of a *gutka* brand associating it with a traditional popular dance



Fig. 6.2c Advertisement of a cigarette brand linking it with youthful images

budget is the new expenditure on point-of-sale advertising (*see* Box 6.13). Manufacturers of *gutka* and other tobacco products have also raised their advertising budgets. Various media are being used by the industry to promote and push their products among select audiences. Tobacco companies are sponsoring television programmes and using their money power to circumvent the spirit of the law.

Trends in tobacco advertisement before the enforcement of the Indian Tobacco Control Act

Newspapers and magazines

There is no net figure available on the expenditure incurred by cigarette and *gutka* companies on advertising. Cigarette companies were sponsoring the sports pages in different newspapers. This trend was started in the wake of the proposed ban on tobacco sponsorship of sports events. Except for magazines on health-related issues, few newspapers or magazines had any policy for prohibiting advertising of tobacco products. There have been reports of *gutka* advertisements on the cover pages of school note-books in the Nagpur district in Maharashtra.

Direct advertisements in the print media

The print media had a plethora of direct tobacco advertisements particularly targeting the youth (Figs 6.2a, b and c). The cigarette companies highlighted 'positive lifestyle images' to glamorize cigarette smoking while chewable forms resorted to highlighting 'traditional Indian Images' and associating chewing tobacco with Indian festivals and ceremonies.

Outdoor advertising

Before the ban was enforced in May 2004, international and domestic brands of cigarettes competed with each other in billboard advertising while chewing tobacco and *beedi* brands resorted to transport vehicles (Fig. 6.3). Point-of-sale advertising still continues to flourish adjacent to schools and colleges as well as in restaurants and kiosks.



Fig. 6.3 Display advertisement of a *gutka* (chewable tobacco) brand behind a Delhi Transport Corporation bus plying on Delhi roads

Current advertising and promotional trends in India

Sponsorships of sports and cultural events

The 1990s witnessed tobacco companies fighting for sponsorship rights of various sports and cultural events. Subsequently, the Indian cricket team came to be sponsored by Wills, the flagship brand of ITC, until its withdrawal in March 2001. Wills doled out Rs 3.3 million for every test match while it paid Rs 3.2 million for every one-day match. The major tennis tournaments in the country were sponsored by the cigarette brand Gold Flake, whereas boat racing was sponsored by the Four Square brand. Major polo events and golf were sponsored by ITC's Classic brand of cigarettes.

On the cultural front, Charms, a cigarette brand exclusively packaged and marketed for the youth by VST, sponsored the 'Spirit of Freedom Concert', a musical event in which the biggest names in vocal and instrumental music participated. The Manikchands, manufacturers of *gutka* by the same name, patronize the widely televised Filmfare awards ceremony in India (Fig. 6.4), which is watched by nearly 32 million individuals.



Fig. 6.4 Filmfare awards sponsored by Manikchand in India

Sponsoring of cultural events in colleges is a big marketing event for the tobacco industry. It is here that a particular lifestyle is marketed to people. This has been an old tactic of the tobacco industry.

The Red & White Bravery Awards

The Red & White Bravery Awards, organized every year since 1990 by GPI, is an indirect method of advertising its Red & White brand of cigarettes (Fig. 6.5). GPI projects this award as

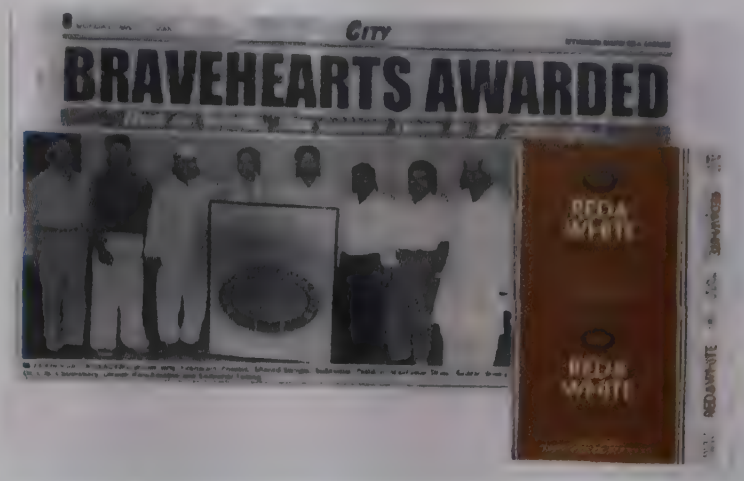


Fig. 6.5 Red & White Bravery Awards sponsored by Godfrey Philips India

a component of their corporate social responsibility. This award is linked with the positive concepts of bravery and social responsibility, and includes a 'compassionate aspect' (Box 6.8).

Box 6.8 The Red & White Bravery Awards

Nominations for the Red & White Bravery Awards are invited through advertisements. These awards recognize people in two categories—three awards are given for physical bravery and three for social courage. The Lifetime Achievement Award for Social Service was instituted in 1997 and carries a cash prize of Rs 100,000.[31] The television advertisements for the Red & White Bravery Awards run for two months and print advertisements even longer. The award ceremony is held as a grand event. Red & White has been able to rope in eminent celebrities such as chief justices, police chiefs, governors of states, attorney generals, deputy chairperson of the Rajya Sabha, sports personalities, etc. to say how great a service Red & White is doing to the country. The list of recipients of the Lifetime Achievement Award for Social Service includes several celebrities. This award ceremony gains widespread publicity at both the regional and national levels. Thereafter, the awardees are frequently profiled in television advertisements, prominently displaying the Red & White logo.

These awards are now given in 15 states across the country. In 2003, judges of the Red & White Awards announced a special award to a young Indian film star Preity Zinta, who has an army of fans, primarily children and the youth.[32] The Red & White Bravery Awards function on 15 March 2004 in Goa was attended by the State Governor and Chief Secretary to the Government and was strongly criticized by health groups.

Box 6.9 GPI's public statement in response to banning surrogate advertising in India

'Red & White Bravery Awards are not surrogate. It is a self-standing trademark that is independent of the Red & White cigarette trademark.'

(IATH April 2004)[33]

Surrogate advertising

The tobacco industry in India is increasingly investing in non-tobacco products by the same brand name as the tobacco product and are aggressively advertising these products through all available media. *Gutka* brands such as Simla, Goa 1000 and Pan Parag, skirt the ban on tobacco advertising on television channels by resorting to surrogate advertising for *paan masala* bearing the same brand name. 502 Pataka *beedi* is a popular brand among the poorer sections in north India. This brand is now being advertised on television as 502 Pataka *chai* (tea). A plethora of advertisements on *paan masala* have mushroomed on media channels. The industry is advertising *paan masala*, bearing the same brand name as other tobacco products and highlighting that *paan masala* is a non-tobacco product.

Passion greeting cards, under the imprint of Gold Flake, are now being marketed through high-end retail stores in all major metros.

Impact of surrogate advertisements: Brand identification

A study conducted by a Mumbai-based NGO, Salaam Bombay Foundation, exposed the stronghold of tobacco advertising on the minds of Mumbai teenagers. The study 'Cancer of the mind' questioned 3260 children in the age group of 12–17 years from 15 municipal and private schools to assess the recall of tobacco advertising among these youngsters. The findings revealed that 77% of the children recalled a *gutka/paan masala* advertisement, 17% remembered a raw tobacco advertisement and only 4% recalled a cigarette advertisement. Over 70% of the children actually recalled the slogan of the advertisement such as Manikchand *gutka*.[34] This study clearly demonstrates how direct and indirect advertisements impact young minds, and how strong is the identification with brands and catchy slogans used in these advertisements.

Contests

The Wills 'Made for Each Other' contest became one of the most popular contests sponsored by a cigarette brand in the 1980s. With lucrative offers, including a holiday abroad for the winning couple, it had courted much controversy over glamorizing and minimizing the dangers of smoking filter cigarettes. One of the requirements for entry to the contest was that either of the couple should be a smoker. A Delhi-based consumer group, Voluntary Organization in Interest of Consumer Education (VOICE) protested against the contest by filing a public interest litigation before the Monopolies and Restrictive Trade Practices Commission (MRTPC), terming it unethical (Box 6.10). The case was eventually lost by VOICE (*see* Section 6.3).

Subsequently, VOICE appealed to the Supreme Court against MRTPC's judgment. VOICE lost this case in the Supreme Court as well. However, after these litigations, this contest has not been relaunched by ITC.

Box 6.10 ITC versus VOICE

In response to ITC's advertisement of the Made for Each Other contest in the Tribune newspaper, VOICE filed a public interest litigation against ITC before the MRTPC in 1984, on the grounds that the intent of this contest was 'to promote cigarette smoking and to promote its business interest'.

The MRTPC is a quasi-judicial body, under the Department of Company Affairs, Government of India. The MRTPC gave a judgment in favour of ITC as during that time cigarette smoking and advertisements of tobacco products were not prohibited by the government. The judgment claimed 'we hold that... No prohibitory order can be passed because the essential pre-requisite of prejudice to the public interest or interest of the consumer under Section 36D91 is not fulfilled. Hence the enquiry is dropped.' (WHO 2000. The role and responsibility of media in global tobacco control).

In December 1999, the Four Square brand of GPI ran the 'Gold in Gold' contest offering gold gift options, which required that entrants to the contest, besides being tobacco users, collect 4 inserts from Four Square Gold cigarette packs. These contests and offers were advertised to entice existing customers and recruit new ones to use their harmful product.

Launch of attractive schemes

Manikchand launched a scheme for its retailers and distributors in May 2001. As per this scheme on purchase of a box of this *gutka*, a scratch coupon was offered which gave the purchaser 2, 3, 5 or 10 pouches of *gutka* absolutely free. This strategy was planned with the intent to coax the retailer to buy bulk stock for sale and encourage a personal user to buy in bulk, indirectly making him more addicted to the product.[35]

Popularizing tobacco use among Indian women

Tobacco companies, by re-engineering social norms, managed to eradicate the taboo of smoking among women in industrialized countries. They successfully associated smoking behaviour with increasing social liberation and emancipation of women. In the same vein, the tobacco industry is now targeting women in developing countries. The tobacco industry is steadfastly proceeding in the direction of making non-smoking among Indian women an evanescent norm. Smoking by a well-known Hindi actress in the film *Godmother*, explicitly exemplifies this industry tactic (Box 6.11). This actress was the perfect choice for the tobacco industry to introduce Indian women to smoking, as being an actress and a member of the upper house of Indian Parliament, she is a role model for Indian women in all strata of the society.

Indian women have always been an attractive target for the tobacco industry as women smokers are a minority here. GPI made an attempt in 1990, by launching the 'Ms' brand of cigarettes especially targeting Indian women. The launch of this brand attracted huge media publicity and protests from women and health groups. The industry responded by saying that this product was especially for 'emancipated' women and all models used for advertising this brand were wearing western attire. GPI tried to associate popular film celebrities with this brand to increase the sale of this product.[36]

Product placement in films

Indian cinema has glamorized tobacco usage for many years. Over the years, efforts have been made to associate smoking with style, romance, tragedy and rebellion through films. According to a study released in May 2003, in which 440 films in different languages released during the period 1991–2002 were reviewed, it was found that tobacco use was portrayed in 76% of these films.[37] Several leading film makers and popular film stars have indirectly promoted cigarette brands by using cigarette packs or brand names and logos in scenes as was seen in movies such as *Godmother*, *Tere mere sapne*, *Chasme baddur*, *Katha* and many others.

Distribution of free samples

Earlier, this tactic of initiating the young into tobacco was restricted to handing out free samples of cigarettes. In March 1997, ITC paid US$ 16 million to put its logo on the Indian

Box 6.11 The smoking 'Godmother'

In India, a well known-Hindi actress acted in a film entitled Godmother. This film is based upon the real-life story of Ms Santokben Jadeja, a woman from Gujarat, who is also a member of the Legislative Assembly of India.

The actress enacting the role of Ms Jadeja is projected to be a 'godmother' (head of an organized crime group) in this movie and is shown smoking throughout the film. The ITC's brand 555 has been strategically placed in two scenes of this film, where it is clearly visible. The irony of the situation is that Ms Jadeja, on whose life this film is based, has never smoked in her life. Before the film's public release, Ms Jadeja filed a defamation suit against the film producers, for having shown her character to be smoking on screen. Smoking is a taboo for Mehr community women to which Ms Jadeja belongs.[38]

cricket teams' uniforms. In the city of Madras (now Chennai), the company sponsored schoolchildren to go to discotheques and handed out invitations to a party. Only children were invited to this party where free liquor and cigarettes were distributed. The children were then photographed for use in future advertisement campaigns.[39]

Recent press reports from Nagpur indicate that *gutka* sachets are given out free near schools and colleges. Strategically, youth in outfits bearing brand names and logos of tobacco products are engaged in these promotional campaigns. In Mumbai, several discotheques and restaurants witness regular Benson & Hedges promotional activities, including distribution of free samples. When Godfrey Philips re-launched its Jaisalmer brand, it sent out young people to bars in Connaught Place, New Delhi to talk to customers and replace their present brand of cigarettes with Jaisalmer. Some of the customers who provided their home addresses received free twin packs of Jaisalmer cigarettes through the mail.

Launching mini cigarettes

One of the tactics that has been used by the Indian giants ITC and GPI is the introduction of 'mini' cigarettes which are non-filter and a less expensive form of their regular cigarettes. GPI launched a 59 mm microcigarette—Tipper—in July 2003. The intent of launching these is explicity explained by industry officials 'We don't make much revenue with these micros. We sell them with the hope people will move up [to a more expensive brand]'.

In India, the number of *beedis* sold is about 8 times the number of cigarettes. *Beedi* users are an attractive target audience for cigarette companies. India is the only country in the world to have a length-based excise duty on cigarettes. This was introduced in India in 1980–1981. Minis take advantage of this by keeping the length small and compete against *beedis*. In 1998, minis were the fastest growing product of the tobacco industry in India, with their consumption increasing at the rate of over 15% per year. The impact of advertisements featuring famous film stars was clearly visible in promoting mini-cigarettes of ITC's brands during 1994–1996. These commercials were flashed in cinema houses all over India. The sales of this mini-cigarette spiralled up from 0.6 billion cigarettes in 1994 to 18 billion by 1996.[29]

Promoting cigarette use in the rural population

To encourage tobacco users to shift from *beedis* to cigarettes, the industry organizes many promotional activities such as street shows, video films, public announcements and other events in rural areas. The intent of these promotional strategies is to encourage smoking by young people in villages or to convert *beedi* and smokeless tobacco users to cigarette smokers. In June 2003, there were reports from a village in Hoshiarpur district, Punjab that a man dressed in western attire walking on stilts and smoking a cigarette, went around the villages promoting cigarettes over a megaphone. This was conducted in tandem with another promotional activity, wherein this cigarette company's vehicle had a video, cassette recorder and a colour television showing pre-recorded cigarette advertisements in Hindi films. This vehicle also had packs of cigarettes for sampling and sale. Youngsters were the prime audience of these advertisements and this promotional strategy.[40]

Brand stretching and diversification

With the advent of a ban on tobacco advertising, several tobacco companies are promoting other products, which bear the same brand name or logo as their popular tobacco product. These logos or brand names can easily be spotted on clothing, sports apparel, hats, trays, posters and stickers affixed to sports vehicles and backpacks. One brand that is visible in almost all metros and towns is the Wills Lifestyle stores (Fig. 6.6). The tobacco industry in India is also veering its investments into myriad non-tobacco products and seems to persevere in this strategy.



Fig. 6.6 Wills Lifestyle store, located in a shopping arcade in Delhi, India

Corporate philanthropy and public relations

The earthquake that ravaged parts of Gujarat in January 2001 was fully exploited by *gutka* manufacturers. They distributed food packets, along with *gutka* sachets to build up their social image. All *gutka* manufacturing companies are actively engaged in supporting local youth clubs by organizing their annual sports events and religious festivities. ITC claims that they invest in education, immunization and family welfare programmes in communities residing close to their factories.

Box 6.12 Event sponsorship to brand stretching

During March 2001, ITC announced a self-imposed ban on tobacco promotion. It withdrew from sponsorship of sports events. This included withdrawing its support to the Indian cricket team, which was sponsored by Wills. ITC had realized that continued sponsorship of sports events in India had begun to yield limited mileage. It was time for them to switch to other forms of advertising, especially brand stretching. Apart from freeing resources by discontinuing sports sponsorship, they wanted to project that they were practising responsible corporate behaviour. Furthermore, sports sponsorship had no appeal for women, an increasingly attractive target for the tobacco trade. Therefore, alternate products of interest to both women and men were linked to the Wills logo: Wills Sports Wear, and Wills Club Life range of evening wear were introduced and are available at Wills Lifestyle outlets all over the country and also accessible via the internet.[41]

ITC also launched the John Players range of men's wear in 2003. This transition from sports to fashion wear thus extended the constituency to both men and women.

ITC recently announced its decision to dissociate the Wills brand name from its cigarette business so that the Wills apparel outlets do not face charges of surrogate advertisement under the Indian Tobacco Control Act.[42]

Other initiatives of ITC

Apart from being involved in manufacturing cigarettes, ITC has undertaken other initiatives. Some of these are:

(i) *Launch of 'e-choupal' in June 2000:* e-choupal services provide farmers with information and knowledge, and act as a direct marketing channel thus reducing the transaction costs. ITC plans to extend e-choupal to 10 million farmers across 10,000 villages covering 15 Indian states.

(ii) *Education support programmes*: ITC has financed the establishment of Supplementary Learning Centres to help poor students improve their scholastic abilities. It has also provided students with uniforms, satchels and books.

(iii) *Promotion of classical music*: Another unique corporate initiative taken up by ITC was the establishment of the ITC Sangeet Research Academy (ITC-SRA) at Kolkata in 1978. It aims to preserve and promote Hindustani classical music. It also holds the much admired and appreciated ITC Sangeet Sammelans annually.

Diversification by ITC

ITC has greatly diversified into different fields ranging from hotels, designer clothing and stationery to the food business. The company ITC Ltd is also in the process of becoming a major retail company. It is working in the direction of searching for brands of fast-moving consumer goods (FMCG). It already has a food division and is now entering the field of milk and soya-based products. There is a strong

proposal to enter the ice cream market as well. Matchboxes and *agarbattis* (incense sticks) are some of the products that ITC launched in January 2004. ITC has also diversified into:

- ITC Paperboards (manufacturing packaging boards);
- ITC International Business Division (the second largest exporter of agro-products in India);
- Greeting cards (Expressions) and Stationery ('Paper Kraft' range of stationery aimed at college and working executives and 'Classmate' range of notebooks for schoolchildren);
- Branded and packaged food business (Aashirvaad Ready Meals, Aashirvaad flour and salt, Confectionary: 'Mint-O' and 'Candyman' and snacks: Sunfeast).[43]

Corporate social responsibility initiatives by GPI

As part of this scheme, Godfrey Philips has supported the AIDS prevention programme, rehabilitation of the Gujarat earthquake victims and blood donation camps. They also help tobacco farmers by creating awareness among them about the benefits of adopting improved farming practices.[44]

Diversification by the Dalmia group

The Dalmia group owns the Golden Tobacco Company and ironically the other arm of the Dalmia group has set up Dalmia Consumer Care (DCC). DCC is the founding corporate member of SEHAT (Safer, Effective, Healthier Alternative to Tobacco) Foundation. DCC has launched tobacco-free products such as Vardan *beedi* and Chabaza gumlets that are marketed as healthier herbal alternatives to *beedi* and *paan masala*, respectively.

The intent of the tobacco industry's diversification is not very clear. Despite all the diversification, the cigarette brands of ITC continue to be their main revenue generator.[45] Whether these efforts at diversification are plans to reduce investment in tobacco production and manufacturing is not known at this stage. There is no comparison between the margins and return on investments involved in these diversified businesses of cigarette companies with the returns from their existing business. GPI's turnover in 2004 was Rs 1,1758.9 million. Of this, Rs 1,1423.2 million was earned from cigarettes and the remaining Rs 335.7 million came from non-tobacco businesses. Similarly, ITC's turnover for the year 2002–2003 was Rs 11,1944.4 million. Of this, cigarettes contributed Rs 8,7640 million. Diversification reduces the dependence on tobacco profits where markets are uncertain, but can also be used to buttress the tobacco industry.

Another reason for diversification could be to protect tobacco interests against the legal action and criticism that the tobacco industry faces globally. Diversification allows movement of finances between companies, possibly making funds inaccessible in the event of a successful lawsuit against the industry. Finally, the diversification of tobacco companies immediately magnifies the business and community influence, expanding their lobby base in the event of legislation or other external threat.

Whether this massive diversification of the tobacco industry is a pragmatic 'hedging the bets' strategy or a means of redeeming its public image or whether it is a calculated move to utilize these ventures for leveraging political and public goodwill to safeguard the tobacco investments is an area that needs to be carefully examined in the Indian context.

Ban on advertising tobacco products

The Ministry of Health and Family Welfare, Government of India, on 25 February 2004 notified certain provisions of the 'Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003'. These provisions,

Box 6.13 Viewpoint of the tobacco industry on ban on advertising in India

'Overall, the ban on advertising will deprive consumers of knowledge to make an informed choice. Consumer pull will give way to trade push. Choice will become more dependent on price and distribution.'

The Tobacco News, 2004[46]

'ITC will not cut down on its advertising and promotional spend after the ban on cigarette advertising. Mass media is a cheaper medium to advertise, but now we will have to rely fully on point-of-sale promotion.'

—Kurush Grant, Chief Executive (Tobacco Division), ITC

which prohibited advertisement of cigarette and other tobacco products, were enforced all over India from 1 May 2004.

Industry tactics to flout the rules prescribed under the Act

The ban on advertising has veered the industry to resort to innovative ways of advertising as they continue to skirt the ban. Tobacco companies have taken recourse to advertising their 'non-tobacco products' multifold since the law was enacted. They have also been flouting the provision of point-of-sale advertising. The rules under this Act allow advertisement on a display board of 60 cm by 30 cm. This is not being observed by the industry as they sponsor these boards for kiosks and other points of sale. The boards are much bigger in size, providing more space for prominent product display (Fig. 6.7).

Current trends in tobacco advertising—post enforcement of Act

Following the announcement of a ban on all forms of tobacco advertising through the Indian Tobacco Act 2003, there has been an upsurge in surrogate advertising and sponsorship of entertainment events. Recent marketing figures indicate that the market spending on advertising tobacco products declined by 2% over the year, while the spending on advertising tobacco brands grew by 28%. This is illustrative of the increasing reliance of tobacco companies on sponsorships, restaurant and hotel programmes, public relations and direct marketing.

Innovative methods of placing tobacco products

With the enforcement of the ban on advertising tobacco products in the print media, tobacco products are being innovatively promoted by them (Fig. 6.8).

Using the services of the Liberty Institute

In recent times, the tobacco industry has also hired the services of the Liberty Institute, based in Delhi, for advocacy of their cause.

The Liberty Institute is a public policy research and educational organization dedicated to highlighting the argument that political and economic freedom are two sides of the same



(a) Display boards on kiosks in Delhi measuring approximately 180 cm X 90 cm



(b) Display boards on kiosks in Delhi measuring approximately 150 cm X 90 cm

Fig. 6.7 Point-of-sale advertisement on display boards, post 1 May 2004

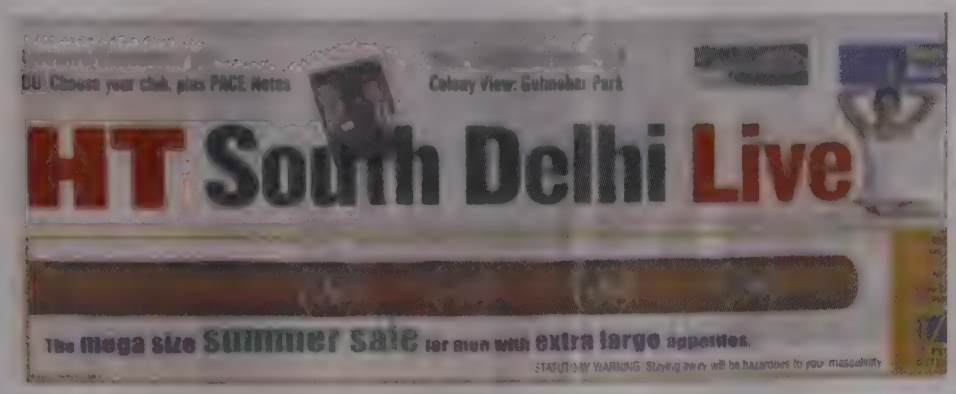


Fig. 6.8 An advertisement of a sale at a clothing store using a cigar as a prop that appeared in the *Hindustan Times*, a leading newspaper of India after the ban on advertising came into force

coin, and that separating one inevitably endangers the other.

'The Liberty Institute was formed to promote awareness and appreciation of the four institutional pillars of a free society—individual rights, the law, limited government and free markets. The Institute particularly seeks to improve our understanding of market processes; to identify the factors that may have restricted the evolution of the market and ways of overcoming those factors; to estimate the costs—social and economic—of curbs on market forces; to propose market-based alternatives to government regulations in the economy particularly in new areas such as social policy, health and safety regulations, and environmental regulations.'

—Quoted from website of The Liberty Institute[47]

In response to the World Bank Report on tobacco, released in 2000, the Liberty Institute released a book entitled *War on Tobacco: At what cost* on 6 May 2000. This book is authored by Professor Deepak Lal and Professor Roger Scruton. Professor Lal asserts that, contrary to the World Bank's claim, there are significant positive effects of producing and using tobacco. The author warns against making unjust economic claims against tobacco for health reasons and condemns the Bank's proposal for increasing taxes on tobacco.

Professor Roger Scruton is a well-known British philosopher. Professor Scruton was dropped as a columnist for the *Financial Times* following the disclosure that he was a paid advisor to Japan Tobacco.[48] He warns of the harms to national sovereignty by allowing the WHO to dictate a global policy on tobacco. Furthermore, Professor Scruton makes a defence for smoking by mentioning 'The WHO has no right to tell you if you can smoke. Smoking is a choice, not a disease. Mrs Brundtland, the then Director General of WHO (July 1988–July 2003) is trying to become a global nanny, and is trying to exert her desires for a Tobacco-Free World (through a UN style convention). She has resorted to claiming that tobacco is a disease.' Professor Scruton expressed that he is appalled that 'by claiming tobacco as a disease it opens the floodgates to more conventions, perhaps on drink, drugs, cars all of which kill, the list is endless'.

Launching mobile smoking lounges (MSL)

The enforcement of the Indian Tobacco Control Act, 2003 banned smoking in public places and advertising tobacco products. This mobilized the tobacco company GPI to introduce an unprecedented consumer service in India. GPI launched two mobile smoking lounges (MSLs) outside a popular shopping mall in Gurgaon in Haryana, India. GPI unveiled these (MSLs) on 3 July 2004. MSL is a comfortably furnished air-conditioned room on wheels. These malls cater to people of both Haryana and Delhi. MSLs were first introduced in Ahmedabad, Gujarat. Haryana is the second state to be provided this consumer service.

The deputy manager (Promotions), Godfrey Philips claimed that this was just a customer service that they were providing and not a promotional campaign. However, cigarettes are available for purchase at these lounges.[49] Since the weather in July in Delhi and Haryana is warm, it can be uncomfortable for smokers to stand outside a building and smoke, hence the introduction of this air-conditioned smoking lounge which has a long queue of young smokers waiting to get inside to smoke (Fig. 6.9). However, environmentalists, activists and



(a) (b)

Fig. 6.9 (a) A mobile smoking lounge parked outside a shopping mall; **(b)** the interior of the mobile smoking lounge

lawyers claim that the industry is circumventing the law by positioning these MSLs. As per the law; the fact that this lounge is attracting the public and is being used by many people makes it a public place.[49]

Innovative collaborations

ITC is supporting an *agarbatti* community participation programme in Bangalore that is being run by the Vyakti Vikas Kendra, a non-profit organization established by Sri Ravishankar who is the founder of the Art of living.[43] Art of Living is a popular spiritual upliftment and yoga programme with numerous followers. These linkages may lead to the formation of a false association between a tobacco product and a positive popular programme such as the Art of Living.

ITC and Life Insurance Corporation (LIC)

LIC is the biggest insurance firm in India. ITC collaborated with LIC and is facilitating LIC in selling their policies through the electronic network of ITC and reaching out to the rural areas.[50] This is another ironical association, as a company-manufacturing life-threatening products is collaborating with agencies insuring the lives of people.

Hookah cafe

The tobacco industry has undertaken another trendy initiative to attract youngsters in metros. Recent reports from Delhi and Mumbai reveal a growing Hookah Café/Shisha Bar culture in cities of India, which is promoting *hookah* smoking among the urban people (Fig. 6.10). The customers visiting these bars are youngsters. *Shisha* is a special blend of tobacco and molasses and is available in various flavours such as apple, peach, mango, mint and strawberry. It is smoked through the *hookah*.[51]



Fig. 6.10 The Hookah Cafe, situated in a market in Saket, New Delhi, India

Contradictory statements issued by the tobacco industry

Globally, the tobacco industry has been known for its strategies of obfuscating facts and manipulating research findings to their advantage.

The Indian tobacco industry was one of the participants at the 'National Conference on Tobacco or Health' convened by the Government of India in 1991. During this conference the tobacco industry made two statements.

'The causal link between consumption of tobacco and its alleged health effect is an unresolved debate and a matter of continuing scientific enquiry.'

— Excerpt from the note of dissent by the representatives of the tobacco industry in response to recommendation of the National Conference on Tobacco or Health, 1991

With the enforcement of the Indian Tobacco Control Act, 2003, the industry has agreed to include health warnings at point-of-sale advertising. These warnings are: 'Tobacco causes cancer' and 'Tobacco kills'. It took the tobacco industry 13 years to concede this well-established scientific fact.

The industry, during the 1991 meeting, denounced the proposal of putting a skull and crossbones sign on cigarette packs to indicate that tobacco products are dangerous. It argued that this strategy can be counterproductive, stating that if children see adults smoking from this pack which has the danger sign on it, children could draw a parallel and consider high-voltage electricity boards and other products bearing such signs to be harmless. However, in the Indian Tobacco Control Act, 2003, the provision on packaging prescribes mandatory placing of the pictogram of a skull and crossbones on all tobacco products. This seems to be now acceptable to the same tobacco industry. In fact, in their recent newsletter, they have proposed how the skull and crossbones can be used effectively on cigarette packs as a health warning (Fig. 6.11).[46] They now argue that this sign is adequate and that other pictograms (such as pictures of patients with cancer) are unnecessary.



Fig. 6.11 Health warnings as suggested by the Tobacco industry in India in their newsletter *The Tobacco News*, March–April 2004

The tobacco industry's ways to thwart the government's efforts

As long as the government is involved and invests in education and awareness programmes on tobacco, the industry is happy. What hurts the industry most are raised taxes and a ban on advertising. There are numerous examples worldwide to illustrate this point. In India, the story is no different. During the tenure of Prime Minister P. V. Narasimha Rao, busloads of tobacco growers and farmers from his home state of Andhra Pradesh were brought to Delhi to protest against any law that would harm their interest. At that time, the government was seriously considering the possibility of introducing the Indian Tobacco Bill in Parliament following the recommendations of the 1991 National Conference on Tobacco or Health, organized by the Ministry of Health and Family Welfare, Government of India.

Releasing newsletters

The Tobacco Institute of India, a public relations front for all the cigarette manufacturing companies, publishes the newsletter *Tobacco News* which is distributed to all policy-makers and legislators to influence their thinking. The newsletter focuses on the economic angle, select Parliament answers, data and statistics from across the globe that are industry-oriented and -generated, select quotes from researchers, surgeons and media personalities.

Issuing paid advertisements

When the Indian Tobacco Control Bill was being debated in the upper and lower houses of Indian Parliament in April 2003, the Tobacco Institute of India placed huge advertisements in major national and regional newspapers to mislead the public and parliamentarians involved in this debate. The advertisements read 'Tobacco legislation based on a western model will encourage tobacco consumption in India' and

'The livelihood of 35 million Indian farmers, tribals, traders and labourers is under threat' (Fig. 6.12).

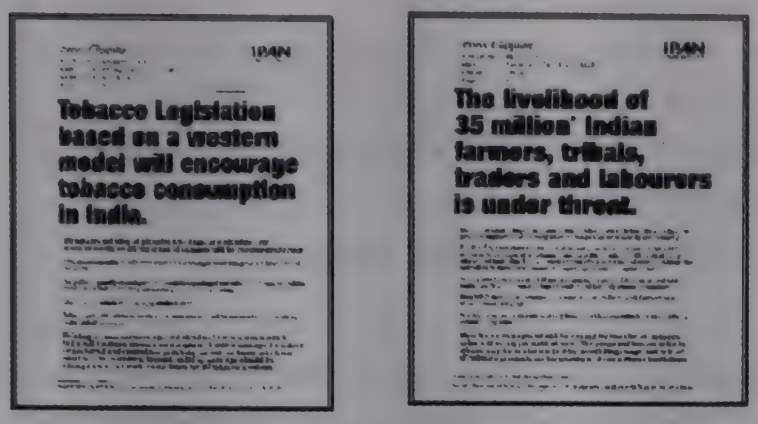


Fig. 6.12 Advertisements by the Tobacco Institute of India in April 2003

Courtesy of choice campaign

The Indian tobacco industry has also placed, 'Courtesy of choice' labels on tables in restaurants and hotels where smoking is permitted, indicating that smokers may smoke, as it is their choice. This is obviously done with the consent and approval of the restaurant and hotel authorities.

Influencing public opinion through the print media

The Indian tobacco industry has been strategically publishing articles in the print media opposing the provisions of the Indian Tobacco Control Act, 2003. They have tried to influence the perspectives of the public and policy-makers on issues related to the ban on smoking in public places. They have tried to hire the services of renowned scientists, doctors and economists to trivialize the issue of second-hand smoking, and have tried to highlight that bans are ineffective and difficult to enforce in countries.

The industry has continuously been opposing the introduction of any strong legislation on tobacco control. They have denounced scientific facts and misled people about the impact of tobacco on human health and the environment. Pursuant to this, the industry tried the bogey of economic losses due to tobacco control. They then resorted to the tactics of right to information for tobacco consumers and right to free speech. Now with the enforcement of the National Tobacco Control Law, the Indian tobacco industry has suddenly decided to show responsible behaviour by a self-imposed code of conduct. They are, however, diverting their efforts now to dilute the rules being framed under the Indian Tobacco Control Act, 2003. Both the smoking and smokeless tobacco segments of the industry are providing the Government of India with recommendations and requests to weaken the rules related to the health warning to be put on tobacco packages. Having failed to stop the enactment of this Act, the industry is now trying to weaken its enforcement. Enforcement agencies, the government and civil societies must be more vigilant to ensure that the industry does not flout the rules of this Act.

6.5 TACTICS OF THE TOBACCO INDUSTRY

KEY MESSAGES

- India is a potential target of tobacco giants due to its billion strong population and many non-smokers. The Indian Tobacco Company (ITC Ltd) controls about 65% of the entire cigarette market in India followed by Philips India Ltd (GPI), Vazir Sultan Tobacco Company (VST) and Golden Tobacco Company (GTC). *Beedi* and smokeless tobacco, which form another huge segment of tobacco trade in India, was earlier an unorganized sector but now is shaping up as an organized corporate sector.
- Tobacco advertising contributed Rs 3000–4000 million every year to the Indian advertising industry, before the ban on advertising was enforced. The tobacco industry used various media to promote and push their products among selected audiences by sponsoring sports and cultural events such as international cricket, television programmes, and advertisements in newspapers, magazines, transport vehicles, etc.
- The tobacco industry in India is increasingly investing in and extensively advertising non-tobacco products by the same brand name. Attractive schemes such as bravery awards, filmfare awards have also been conducted by several tobacco companies, indirectly promoting their products.
- The tobacco industry has tried to introduce smoking among Indian women by several innovative methods such as showing smoking scenes in films by famous personalities who are considered role models for Indian women. Leading film makers and popular film stars were also indirectly involved in promoting cigarette brands by consciously using cigarette packs or brand names and logos in films.
- Several tobacco companies have greatly diversified into different fields ranging from hotels, designer clothing, development programmes, and stationery to the food business, etc. Despite all diversifications, the cigarette brands still continue to be their main revenue generator. Whether these efforts of diversification are plans to reduce investment in tobacco production and manufacturing are not known.
- Introduction of 'mobile smoking lounges' and the Hookah Café/Shisha Bar culture in India, publishing Tobacco newsletters, and misleading the public through paid advertisements in favour of tobacco are some of the typical examples of innovative methods used by tobacco companies to promote their products. As the tobacco companies are continuously trying to dilute the laws for tobacco control, enforcement agencies, government and civil society organizations have to be vigilant about their tactics.

6.6

Health Education and Mass Media Efforts

The primary tool for tobacco control is comprehensive and active awareness of the population about the ill effects of tobacco use, with special emphasis on all aspects of this impact, i.e. social, physical, financial and environmental. In the 1960s, when the word 'prevention' was added to the health discourse, the concept referred to a multipronged approach to disseminate warnings about products and practices that health professionals considered potential health hazards along with educating the youth through school curricula.[52]

Efforts made by the government and non-governmental organizations (NGOs) for educating the community on issues related to tobacco control have intensified in the past few years. Well-conducted research globally has established that it is necessary to reduce demand through such education married with changes at the policy level, which also serves to countervail the industry's efforts to promote tobacco. These mass education efforts along with policy changes are targeted at reinforcing and changing the social norms towards no tobacco use. The Centers for Disease Control's (CDC) best practice guidelines suggest that public education is an integral part of the efforts to both prevent initiation of tobacco use and to encourage tobacco cessation.[53]

Effectiveness of health education in India

Research studies evaluating the effectiveness of health education in India have shown successful results among the youth and adults. Intervention research on awareness related to tobacco avoidance and control have shown to positively alter tobacco use practices among the youth in India.[54] Health education intervention at the school level has also shown positive results in India. In a group randomized trial conducted with seventh grade students in 30 elementary schools of Delhi, intervention provided at the school and home level had a significant positive impact on tobacco use. This intervention lowered the offers, experimentation and intentions to use tobacco in the intervention group as compared to control schools. The intervention was provided in the form of classroom curricula, posters, booklets and debate at the school level, and informative and engaging materials for families at the home level.[54]

An intervention study in 3 places—Ernakulam, Kerala; Bhavnagar, Gujarat; and Srikakulam, Andhra Pradesh—reported the decline of tobacco use by 2%, 1% and 5%, respectively, after 1 year. Additionally, 1%–6% of people had reduced their tobacco use. The intervention was a mix of one on one discussion along with the use of IEC materials, individual discussions with a social scientist, film shows and exhibition of posters.[55]

In an intervention study among 36,471 tobacco users, substantially more people stopped the habit and reduced the frequency of tobacco use in the intervention cohort than in the control cohort in Ernakulam (Kerala) and Srikakulam (Andhra) whereas in Bhavnagar (Gujarat) the intervention group showed a lesser proportion of people stopping their tobacco use and there was no difference in the proportion reducing them after 5 years. The interventions were in the form of health education from dentists at the point of health care delivery. Information was also disseminated via films, posters, radio broadcasts and newspaper articles.[56]

A cohort study was undertaken in Ernakulam. It showed (on follow up after 8 years) a greater reduction of tobacco use among intervention cohort compared to control cohort. Among men, the decrease was more in smokers and those with mixed habits compared to chewers. The intervention cohort was subjected to a concen-

trated programme of health education which included personal as well as mass media communication concerning tobacco use in various forms.[57]

Communication inputs designed for these interventions were personal communication, films, folk dramas, radio programmes, cessation camps, etc. and the population was exposed to them in measured doses. These approaches brought about cessation in 14% of the tobacco users. Personal communication that included one-to-one interaction was the most preferred input by the population.[58]

Another study was done in Kolar (Karnataka) to assess the efficacy of anti-tobacco community education programmes. Here, health education including screening of films, exhibition and a display of photographs on the harmful effects of tobacco were used. The decline rates in tobacco use were 10.2% in males and 16.3% in females, and the quit rates were 26.5% in males and 36.7% in females compared to the baseline in the intervention cohort.[59]

Health education efforts in India have been few but effective. These efforts have been effective mainly due to the paucity of information among the population on the impact of tobacco use. However, efforts at the national level are required to counteract this menace which can be largely curtailed through prevention and successful quitting as a result of health education.

Initiatives takes by the Central and State Government

Under the Ministry of Health and Family Welfare (MOHFW), the Government of India has set up the Central Health Education Bureau (CHEB) and its state chapters called the State Health Education Bureaus. Every year, the CHEB conducts an activity of 4–6 weeks around the World No Tobacco Day on 31 May. Similarly, the Directorate of Advertising and Visual Publicity (DAVP) and the Song and Drama Division, under the Ministry of Information and Broadcasting (I&B) are creating awareness among the masses on various public and social health issues.

Traditionally, tobacco never had a prominent place in the public awareness education programmes of the Central or State Governments in India. Immunization, tuberculosis and malaria, alcohol and drug addiction took pride of place. Tobacco control awareness education got the least attention, and there is no evidence of any systematic and concerted effort by either the Central or State Governments to educate the masses on tobacco. Its is only recently, after the setting up of the National Tobacco Control (NTC) cell under MOHFW, that awareness education through the media such as print and television has begun in a strategic manner. However, a sustained visible media awareness programme or campaign is yet to begin. Allocation of dedicated funds for tobacco control education is a major deterrent in achieving this goal of mass awareness.

Before the establishment of the NTC cell, merely symbolic tobacco control efforts were made by the Central and State Governments during the World No Tobacco Day. On that day, the print and electronic media carried anti-tobacco messages issued by the government and the World Health Organization (WHO), as well as news of seminars and conferences organized by government agencies to commemorate the day. The government also conducted a few sporadic activities against tobacco that appeared on the national channel (Delhi Doordarshan [DD]) through the DAVP. However, due to non-sustained and disjointed efforts, no tangible results were gained at the national level.

Efforts undertaken by the Ministry of Health

In 1984, the Union Ministry of Health launched the National Cancer Control Programme, which included a component for educating the public about the dangers of tobacco to eliminate

tobacco-related cancers.[60] This was, however, a relatively small component of the programme, which mainly focused on providing clinical care, establishment of cancer registries and screening for some cancers.

Collaboration between the Ministry of Health and WHO

In addition to a few events on the World No Tobacco Day, the Ministry of Health has reached out to the rural audience through programmes such as those listed below.

(i) The South-East Asia Anti-tobacco Flame rally covered a large number of states in India during 2000–2001 and later, in its second phase, in the year 2002. This campaign was coordinated by the Nehru Yuva Kendra. Anti-tobacco messages were disseminated using street plays performed in the local language, targeting the tobacco products used locally. This led to greater penetration of the programme, even in the remotest parts of the country. All aspects of tobacco use were targeted. Apart from the health impact, concomitant social and economic burdens of tobacco use were also highlighted in this anti-tobacco campaign.
(ii) Awareness dissemination was carried out through 268 field units of the Directorate of Field Publicity (DFP), which are located at grassroots levels in villages throughout the country.
(iii) The World Health Organization–South-East Asia Region (WHO-SEARO) initiated a year-long campaign in January 2000 to curb tobacco consumption in South-East Asia. This campaign included educational programmes on television in these countries, including India.

National Tobacco Control cell

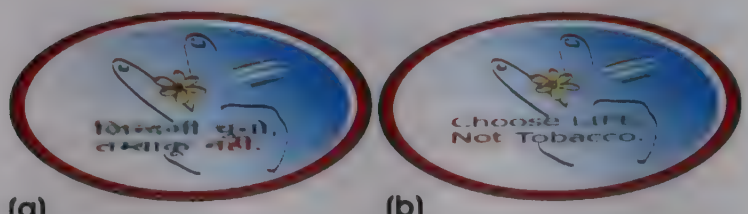
The NTC cell is supported by WHO's India Office and is physically located in the MOHFW at New Delhi. This cell has streamlined and intensified the health education and mass media efforts related to tobacco control in India in the past few years. This cell was set up as a result of collaborative efforts by the Ministry of Health and WHO in February 2001 to provide impetus to the tobacco control efforts and to coordinate these activities at the national level. It also facilitated the development of a strategic media plan to provide health education among the masses. The media plan of the NTC cell focused specifically on protecting vulnerable segments such as the youth and passive smokers. There is no analogous cell in any other ministry. The Tobacco Free Initiative (TFI) in WHO's India Office is one of the largest programmes worldwide, clearly highlighting tobacco control to be a high priority for the country and WHO in India. The focus areas of work in the TFI are:

(i) Planning and executing a comprehensive information, education and communication plan;
(ii) Capacity-building among NGOs working in the field of tobacco control;
(iii) Establishment and strengthening of tobacco cessation clinics; and
(iv) Undertaking research on policy issues related to tobacco.

Efforts undertaken by the National Tobacco Control cell

Developing an India-specific anti-tobacco logo

In 2001, the NTC cell developed an India-specific logo and slogan to highlight India's tobacco control efforts. The logo is a red circle surrounding a hand in the gesture of a victory sign and holding a flower. On the blue background there are three brushstrokes, of the three colours in the Indian national flag (saffron, white and green). This logo has a slogan 'Choose Life, Not Tobacco'. The slogan has been translated into Hindi and other regional languages as well (Fig. 6.13a and b).



(a) (b)

Fig. 6.13 The logo of the National Tobacco Control programme

Television and audio advertisements

During 2001–2002, the NTC cell developed 13 anti-tobacco television advertisements (30 seconds and 15 seconds, duration) targeting the entire spectrum of tobacco products used in India—cigarettes, *beedis* and chewable forms. Anti-tobacco radio advertisements have also been developed under the auspices of this cell and aired on various popular radio channels. The Ministry of Health regularly releases anti-tobacco advertisements on Prasar Bharti (the independent broadcast corporation that has replaced the state television and radio services). The frequency of airing of these advertisements is sparse, due to the paucity of funds. It usually is a month-long campaign carried out mostly around the World No Tobacco Day through the CHEB. The TV advertisements and infomercials aired during 2002 aimed extensively at popular youth channels on cable and satellite and on the national channel to ensure a wider reach of these health messages.

Production of information, education and communication (IEC) materials

The DAVP, Ministry of I&B, in coordination with the NTC cell designed and produced IEC materials related to tobacco control in all Indian languages. The IEC materials designed include posters, flip charts (Fig. 6.14), brochures

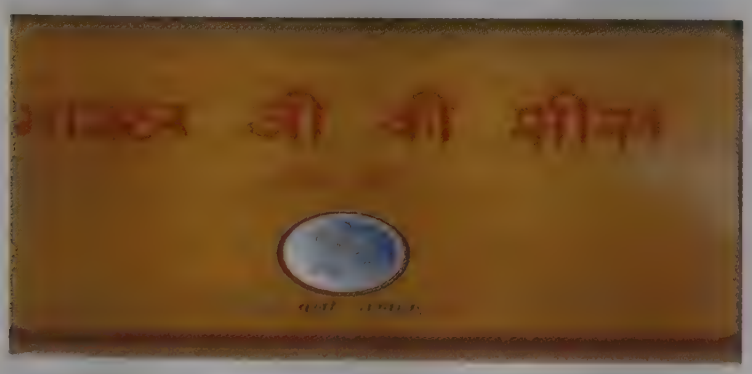


Fig. 6.14 A flip chart having an anti-tobacco message created and distributed by the National Tobacco Control Cell

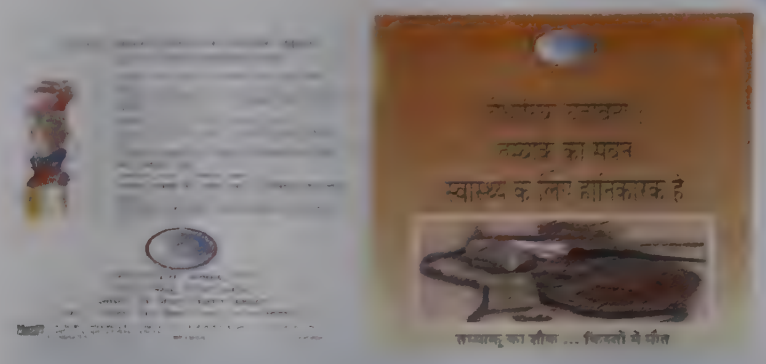


Fig. 6.15 Sample of a brochure on the ill-effects of tobacco

(Fig. 6.15; in 16 regional languages), bus panels (Fig. 6.16), mobile exhibition kits, and stickers with the logo of the Indian Tobacco Control Programme. These materials were produced in 2002 and distributed to stakeholders through DAVP. These are also disseminated across the country through various health institutions, NGOs, etc.

Outdoor publicity

Display of anti-tobacco slogans and visuals through bus panels was coordinated by the NTC cell in collaboration with the outdoor publicity unit of the DAVP.

Development of an anti-tobacco mass media plan

The NTC cell assisted the Ministry of Health in devising a seamless mass media plan to reach the rural, semi-urban masses and vulnerable audience—passive smokers and urban youth.

(i) Doordarshan: Anti-*beedi* and anti-*gutka* TV commercials are aired on the national TV channels to reach the semi-urban, rural and marginal populations.



Fig. 6.16 Anti-tobacco message on a bus

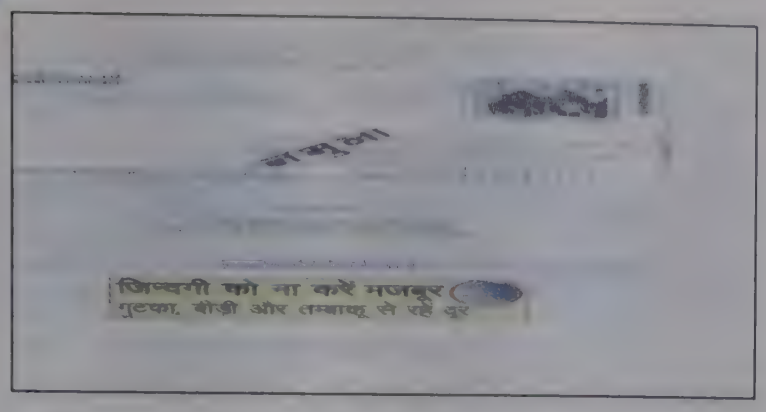


Fig. 6.17 Sample of an inland letter bearing an anti-tobacco message

(ii) Media post: The Department of Posts has launched an innovative means of taking messages to the masses called the Media Post. This media vehicle offers the option of printing health messages on postal stationery, i.e. postcards, inland letters (Fig. 6.17), aeorgrammes, etc. Each postal stationery item reaches at least 6–7 persons all over the country and therefore the impact of the messages is manifold. Since 2003, inland letters bearing anti-tobacco messages have been used by the postal department.

(iii) Kalyani Programme: In 2001–2002, the Ministry of Health, in collaboration with Prasar Bharti, decided to launch a weekly health show to be telecast on various regional Doordarshan *kendras*. Kalyani is a health programme aired on the regional channels of Doordarshan between 7.00 pm and 7.30 pm for half an hour once a week. Each of the eight states covered makes its own programme in the local dialect revolving around a common theme. It covers issues related to six diseases including those related to tobacco use. The NTC cell contributed to the discussions on the communication strategy and also coordinated for inputs in the various regional workshops. The programme was launched on the eve of World No Tobacco Day, 2002. Several anti-tobacco commercials are aired during the show and detailed discussions on the ill-effects of tobacco use are shown. This programme is largely for rural audiences in the Hindi-speaking belt, where tobacco prevalence is high.

Organizing health melas

The Ministry of Health conducts health *melas* (fairs) in 543 parliamentary constituencies of the country. In these *melas*, information is disseminated about various diseases including non-communicable diseases (NCD) and those caused due to use of tobacco. These *melas* include mobile exhibitions on tobacco, displaying posters, handouts, audiovisual aids, projectors, movies, etc.

Counter-advertisements in the print media

Other than the regular yearly feature of a half page advertisement released on the World No Tobacco Day in all major newspapers, the print media has been selectively utilized for specific campaigns, e.g. campaign against passive smoking. Full page colour advertisements were released in magazines such as *India Today, Outlook, Femina,* etc. The intent of this campaign was to create public awareness against passive smoking and empowerment of non-smokers. This intervention was successfully implemented and evaluation revealed that the recall level of both smokers and non-smokers for the campaign was high (Fig. 6.18).

Felicitation of role models

The World Health Organization recently awarded Vivek Oberoi, a well-known film star



Fig. 6.18 A counter-advertisement on passive smoking that appeared in *India Today,* 2 June 2003

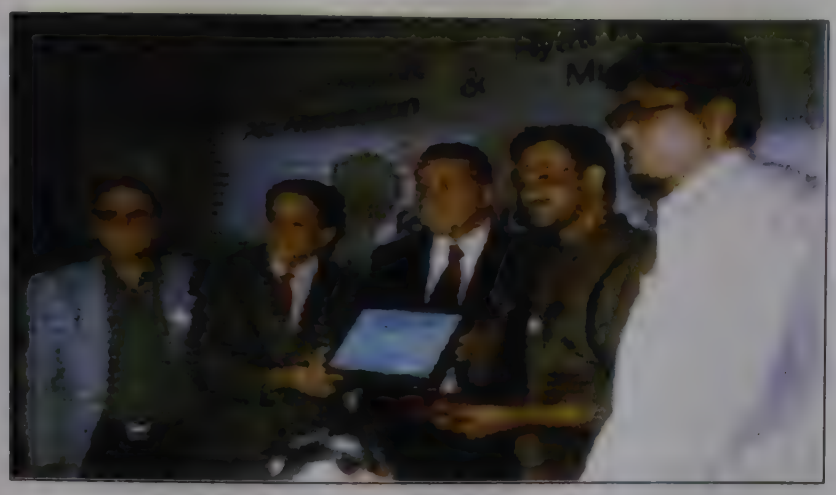


Fig. 6.19 Felicitation of Bollywood actor Vivek Oberoi with the World No Tobacco Award 2004

in India, with the 'World No Tobacco Award' for the year 2004 (Fig. 6.19). Vivek Oberoi is a role model for the Indian youth and has been felicitated with this award for his efforts in and commitment to fighting the tobacco menace. He was also instrumental in the production of an anti-tobacco advertisement featuring other film stars, which was developed by the Cancer Patients Aid Association (CPAA) in collaboration with WHO on World No Tobacco Day 2003.[61]

Evaluation of these programmes

Evaluation of all these activities is undertaken on a regular basis to assess the reach it has on the masses. The print medium, in that context, loses to the audiovisual channels such as television and radio, due to its usage being limited to the literate population only. Television has a greater reach, even to the rural people of the country who form the majority of the Indian population. For them, the impact of such messages is greater when it can be easily comprehended through visual aids. Therefore, television and radio have to be the primary media for carrying out such activities.

Other efforts in collaboration with the Ministry of Information and Broadcasting

Radio-DATE

In 1990, the Indian Council of Medical Research (ICMR) and All India Radio (AIR) embarked on an innovative and ambitious project called Radio-DATE (DATE standing for Drugs, Alcohol and Tobacco Education). The idea was to produce a series of episodes on drugs, alcohol and tobacco, intended to reach out to youth across the country and involve them in interactive and educational programmes. The ICMR with assistance from the Voluntary Health Association of India (VHAI) and several technical experts developed IEC materials for the programme, which were mailed to all registered radio listeners. VHAI designed posters and informative leaflets on the hazards of using tobacco. In all, 84 radio stations of AIR broadcast 30 weekly episodes of the programme. Regional stations also translated the episodes into their respective regional languages as per the guidelines of AIR and ICMR. Listeners were requested to participate in poster painting competitions and VHAI was invited to judge the entries.

Two community-based surveys in rural areas with no organized anti-tobacco programmes showed that about 4% of tobacco users in rural Goa and about 6% of users in rural Karnataka quit their habit after hearing the programme. Of the potential listeners, about 32% in Karnataka and about 27% in Goa had heard at least one episode on tobacco.

Commemoration of the World No Tobacco Day

The Ministry of Health and WHO collaborate with various agencies to commemorate the World No Tobacco Day on a large scale each year for wider dissemination of the theme for that year. The Union Health Ministers as well as several State Ministers and Governors have been involved in the events organized in Delhi and other states of India on this day.

Health institutions and NGOs in almost every state of India organize events around the theme of the World No Tobacco Day every year. The array of activities ranges from awareness through rallies, street plays, seminars to advocacy events, such as submission of anti-tobacco signature

campaigns to government officials and policy-makers.

Efforts undertaken by State Governments

The Public Health Department of Maharastra initiated its tobacco control drive in the year 1986 with a campaign against smoking.

The Public Health Department adopted a slogan and displayed posters on the impact of passive smoking. The slogan, 'Your smoking is injurious to our health' was effectively used by non-smokers to counter the indifference of smokers.

Statewide cancer control programmes

The two-day workshop on cancer, conducted in Bombay (now Mumbai) by the Tata Memorial Hospital in 1987, in collaboration with the UICC (The International Union against Cancer), led to the formation of statewide cancer control programmes. One of the strategies developed under this programme was to initiate aggressive anti-smoking campaigns in every state of India.

Efforts made by NGOs in education

Interventions made by NGOs in different states have had different outcomes. Considerable publicity gets generated locally when there is press coverage, and serves as the cheapest medium for generating awareness about tobacco. Some NGOs also use the local cable network for making people aware about the tobacco menace.

Box 6.13 Preferring education over legislation

The Director of Health Services, Government of Maharashtra stated that the reason for laying emphasis on public education rather than advocating for strong legislation is that 'It has been our experience that legislation without proper public awareness and commitment will not be successful.'

Around the World No Tobacco Day, celebrities from different walks of life, such as cricketers and film stars come together to conduct awareness campaigns. The World No Tobacco Day celebrations begin almost one month in advance. Different themes are selected by WHO every year, around which programmes are conducted in India.

The CPAA developed three TV advertisements using popular film stars as messengers for anti-tobacco messages. These commercials were done free of charge by these film stars and the technical charges were supplemented by WHO. The Indian Cancer Society also took the initiative of adapting internationally acclaimed tobacco control campaigns to the Indian scenario with the help of WHO/Ministry of Health. All these advertisements are being widely used not only through the mass media but also through dissemination of the same through school- and community-based interventions.

Initiatives taken by State Voluntary Health Associations

Many civil society organizations have, on their own or with support from WHO and the Ministry of Health, taken up tobacco education in their constituencies. Many State Voluntary Health Associations (SVHAs), which are federal units of the VHAI, have integrated tobacco as part of their ongoing training programmes, are implementing and monitoring Health Ministry- and WHO-supported projects, have conducted surveys, brought out IEC materials, approached legislatures and have taken up tobacco awareness education programmes.

Education to aid enforcement

Though many states have anti-tobacco laws, their implementation is hardly visible. Political compulsions overtake public health concerns. In most states from which information was sought (Himachal Pradesh, Madhya Pradesh, Bihar, Gujarat, Sikkim, Kerala, Karnataka, West

Bengal, Orissa, Punjab and Rajasthan), the law-enforcing agency officials were not aware of all the provisions of the State Act, while most of the officers were not aware of any such Act. After the notification of the Tobacco Control Act in May 2004, the Ministry of Health has initiated a nationwide public awareness campaign during August 2004 through television and radio to educate the public on the provisions of the Indian Tobacco Control Act, 2003. The IEC Bureau of MoHFW, Government of Rajasthan issued posters giving information about the Act, its provisions and the officers empowered to take action, to all the ministries and put them up at public places. It is also interesting to note here that the Government of Rajasthan has in place an Act dating back to 1950, called the Prevention of Juvenile Smoking Act. An effort is required by the Union Ministry of Health to sensitize the health ministries of all State Governments to ensure effective implementation of the Act. Efforts need to be made to involve law-enforcing agencies and related departments of other Central Government ministries as well.

To promulgate the provisions of the Indian Tobacco Control Act, civil society groups have launched efforts to educate the public about the provisions of the State and Central legislations. In Delhi, for example, Student Health Action Network (SHAN), the advocacy wing of Health Related Information Dissemination Amongst Youth (HRIDAY), distributed information brochures detailing the provisions related to the ban on smoking in public places, to hotels and restaurants in Delhi and nine other cities of India, and conducted public awareness campaigns on the rights of non-smokers.

An effective public education campaign must use multiple channels to reach the target audience with messages that are based on research regarding what is most effective. A well-designed public education campaign that is integrated with community- and school-based programmes, has been demonstrated to lower smoking among young people. Such effects also last for a longer time.[62]

The Massachusetts tobacco control campaign, which has a sizeable public education component, has been effective in increasing public perception of the harms of cigarette smoking and was associated with a substantial decline in cigarette consumption.[63,64]

Considering these best practices, a concerted effort between the government and civil society groups needs to be planned to ensure development and implementation of a comprehensive health education programme on tobacco avoidance and tobacco control in India.

6.6 HEALTH EDUCATION AND MASS MEDIA EFFORTS

KEY MESSAGES

- The primary tool for tobacco control is to impart comprehensive information to the population about the ill-effects of tobacco use.
- Public education is an integral part of the efforts to both prevent initiation of tobacco use and encourage tobacco cessation.
- Efforts made by the government and NGOs for educating the community on issues related to tobacco control, although few, have intensified in the past few years.
- NGOs have played a major role in organizing educational activities on the ill-effects of tobacco.
- Evaluation of some of the educational intervention studies has shown a positive impact on the reduction of tobacco use.
- Various governmental and non-governmental organizations should come together to ensure the development and implementation of a comprehensive health education programme on tobacco avoidance and tobacco control in India.

6.7

Indian Experience with Tobacco Cessation

Tobacco cessation services are among the areas that have to be addressed as per the Framework Convention on Tobacco Control (FCTC). With the establishment of the National Tobacco Control Cell as part of the Government of India and World Health Organization (WHO) initiative on tobacco control in India, it was felt that tobacco cessation services have to be developed to help tobacco users in India give up their habit. The Ministry of Health and Family Welfare, Government of India, in recognition of this need, has started such clinics on a pilot basis in 13 centres.

In 2002, the WHO supported the setting up of 12 tobacco cessation clinics (TCCs) in diverse settings (cancer treatment centres, psychiatric centres, medical colleges and non-governmental organizations [NGOs]) to help people stop tobacco use.

Methodology

Initially, 12 centres across India were selected in various settings such as regional cancer centres, psychiatry centres, medical colleges and NGOs. After initial training in Thailand, the individuals involved were further trained at the Institute of Human Behaviour and Allied Sciences, New Delhi. All centres were provided with support for additional human resources in the form of a clinical psychologist and medical social worker. Infrastructure augmentation in the form of computer and audiovisual equipment were supplied. Cotinine test kits and bupropion tablets were also provided. An algorithm was developed for cessation services at the various centres. The algorithm consisted of initial assessment, three steps of intervention and evaluation at regular intervals, preferably with urinary cotinine estimation as an objective measure of cessation.

Extensive community interaction programmes were organized by all the centres. The clinics were physically placed within major hospitals except at the Goa centre. This helped to attract subjects who presented themselves to the hospitals as patients or as attendants. Patients who presented with various co-morbidities were referred to these clinics for tobacco cessation. Periodic monitoring of the centres was carried out and mid-course corrections were introduced as required. The thirteenth centre was added in a specialty centre for chest diseases.

Behavioural change counselling was the most common intervention. Given the varied setting, pharmacotherapy with bupropion was not uniformly utilized. Some of the centres with strong support of the clinical psychiatry department did introduce pharmacotherapy. Cotinine tests were tried initially, but did not add to self-reported cessation.

Self-help tips and behavioural change counselling modules were developed and over a period of one year, the centres were stabilized with regard to the cessation services. Some centres had large numbers of tobacco chewers and similar interventions as for tobacco smoking were used in this group.

The intake and follow-up proforma has been standardized and will be made available on the internet shortly with data entry and analytical facilities. A resource manual for tobacco cessation services is also being developed. The centres have developed modules for tobacco cessation in Indian languages, as per local needs.

Outcome

The tobacco cessation clinics were established in 2002 and, over the past two years, they have aggregated a large number of subjects, which

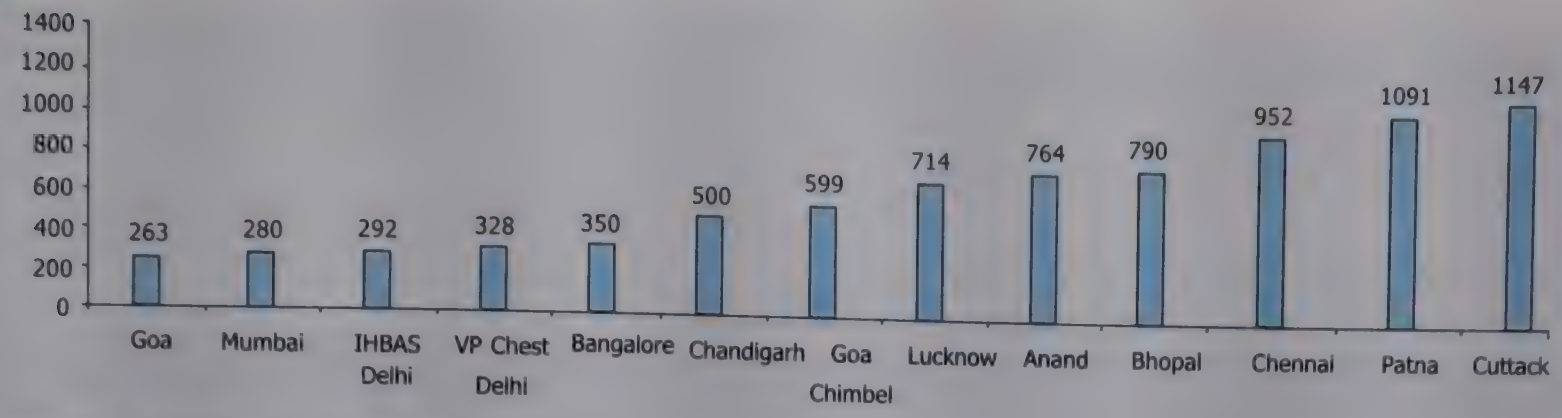


Fig. 6.20 Number of subjects seen at various centres

has provided strength to this initiative. As on 30 September 2003, 8070 subjects were seen in these clinics with a total of 9551 follow-up visits. There were 7494 men and 576 women. The distribution of the subjects seen at the various centres are given in Fig. 6.20.

As per the original algorithm, a step-wise approach was suggested, but given the variation at the centres, an analysis based on the level of intervention was not carried out. The interventions were grouped into counselling alone, and counselling and pharmacotherapy. The outcome of the intervention was ascertained at 6 weeks and was classified as complete abstinence or reduced to more than 50% of the initial use. The prevalence of tobacco use by type is given in Fig. 6.21. The outcomes at 6 weeks are shown in Figs 6.22–6.24.

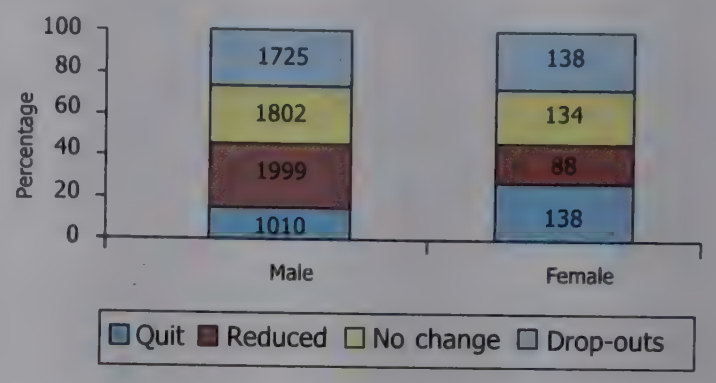


Fig. 6.22 Outcome at 6 weeks by gender

Discussion

Tobacco cessation services have been found to be feasible in Indian settings (Table 6.6). The quit rates achieved with behavioural change

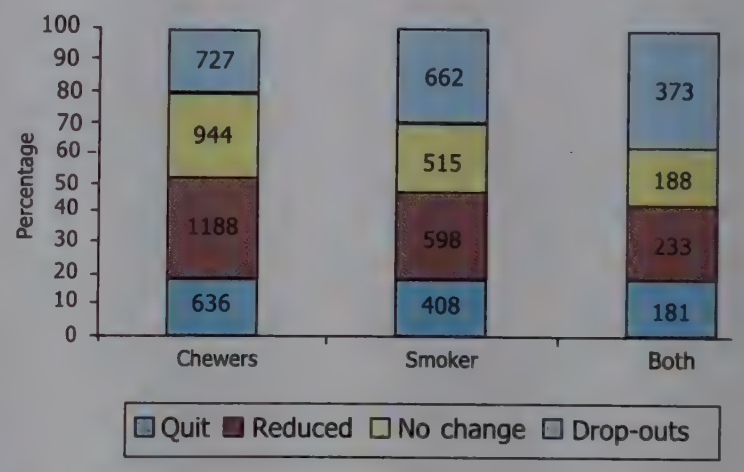


Fig. 6.23 Outcome at 6 weeks by type of tobacco use

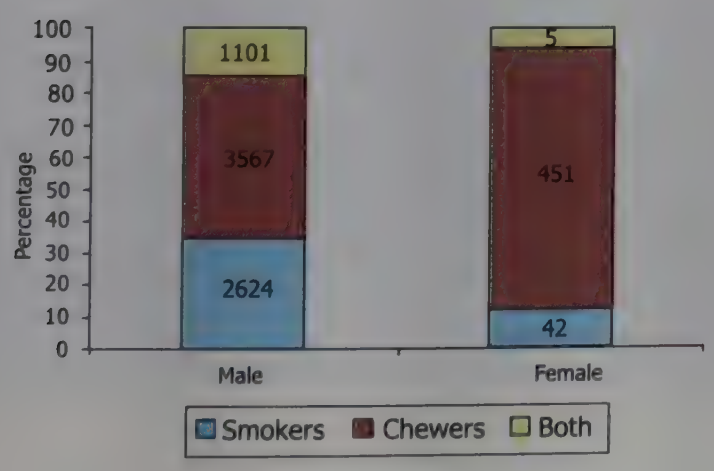


Fig. 6.21 Prevalence of tobacco habits among attendees

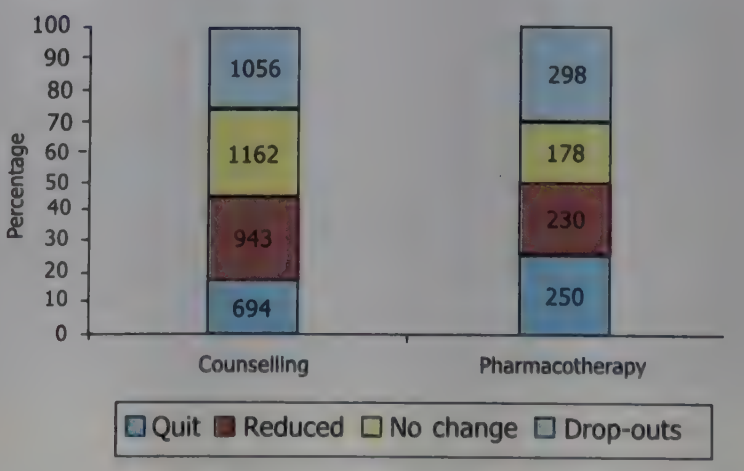


Fig. 6.24 Outcome at 6 weeks by type of intervention

counselling, which is the least expensive and most feasible option, are satisfactory and provide scope for further improvement.

The overall quit rate at 6 weeks was around 16%. The addition of pharmacotherapy improved the quit rates. Counselling is cost-effective and can be the preferred option for expanding the services. Pharmacotherapy may be limited to services which have good clinical support.

Table 6.6 List of 13 tobacco cessation clinics in India

S. No.	Contact person(s)	Name of the centre	Contact details
1.	Dr Surendra Shastri Professor and Head	Tata Memorial Hospital Department of Preventive Oncology Dr Ernest Borges Road, Parel, Mumbai 400012	Tel 022-24154379 email: shastri@vsnl.com
2.	Dr Savita Malhotra Professor and Head Department of Psychiatry Dr Anil Malhotra De-addiction Centre	Postgraduate Institute of Medical Education and Research Chandigarh 160012	Tel 0172-2744503 email: savita@ch1.dot.net.in
3.	Dr Nimesh G. Desai Professor and Head of the Department of Psychiatry Dr S. N. Sengupta Additional Professor Dr R. A. Singh Associate Professor Dr Uday K. Sinha Associate Professor Dr Deepak Srivastva Assistant Professor Dr Rupali Shivalkar Senior Resident	Institute of Human Behaviour and Allied Sciences G.T. Road, Dilshad Garden, Post Box No. 9250, Delhi 95	Tel 011-22113395 email: tccihbasrc@hotmail.com
4.	Dr Girish Mishra Professor and Head of the ENT and Head and Neck Surgery	Pramukhswami Medical College and Shree Krishna Hospital Karamsad 388325, Gujarat *Satellite centres* • Mayank Jayant Foundation, Anand • Urban Health Centre Petlad • Rural Health Centre, Ardi	Tel 02692-223010 Contact nos. 02692-223254, 223256 email: dakshagiri@yahoo.com
5.	Dr U. R. Parija Head of the Department of Head and Neck Oncology Division	Acharya Harihar Regional Cancer Centre Medical Road, Manglabad, Cuttack 753007 *Satellite centres* • Tobacco Cessation Clinic, Sub-centre, Bentkar PHC, Cuttack • Tobacco Cessation Clinic, Sub-centre, Kishore Nagar PHC Cuttack	Tel 0671-2302535 email: urparija@csmti.com
6.	Dr Mahabir Das Principal Investigator	Indira Gandhi Institute of Cardiology	Tel 0612-2532848 email: mdasnotebihar@sify.com
7.	Dr Rama Kant Department of Surgery	Chatrapati Shahuji Maharaj Medical University Lucknow 226016	Tel 0522-358230 email:ramakant@globallink.org
8.	Dr B. Sanyal Radiation Oncologist Dr K. S. Saluja Medical Officer	Jawaharlal Nehru Cancer Hospital and Research Centre P.O. Box No. 32, Idgah Hills, Bhopal 462001 Madhya Pradesh	Tel 0755-2666611 email: jnchwhotcc@sify.com

Table 6.6 (*cont.*) List of 13 tobacco cessation clinics in India

S. No.	Contact person	Name of the centre	Contact details
9.	Dr Shekhar Salkar Surgical Oncologist General Secretary NOTE India	Salgaokar Medical Research Centre Chicalim, Goa 403711, Vaidya Hospital, 1st Floor, Panaji, Goa 403001 *Satellite centres* • Bambolim: Medicine OPD of Goa Medical College • Bicholim: Cairo's Hospital • Chicalim: Salgaoncar Medical Research Centre (SMRC) • Vasco: Goa Shipyard Ltd., Vasco • Margao: Dr Gopal Vaidya's clinic • Canacona: Dr Sadanand Prabhu's clinic • Chimbel: Lifeline Foundation (Community-based unit) • Mapusa: Teldulkar Hospital	Tel 0832-2423366 email: sssalkar@yahoo.co.in
10.	Dr Vivek Sharma Consultant Physician	Bhagwan Mahaveer Cancer Hospital and Eradication Jawahar Lal Nehru Marg, Jaipur 302017 *Satellite centres* • Ayurvedic Clinic, University Campus Dispensary, University of Rajasthan, Jaipur • Room No. 217, OPD Block, Santokba Durlabhji Memorial Hospital and Research Centre, Bhawani Singh Marg Jaipur 302015	Tel 9829049363 email: vivek_9sharma @yahoo.com
11.	Dr Mohan Issac Professor of Psychiatry Dr Partima Murthy Associate Professor Dr Vivek Benegal	National institute of Mental Health and Neuro Sciences (NIMHANS), Bangalore	Tel 080- 26995311 email: mki@nimhans.kar.nic.in
12.	Dr Rohini Prem Kumari Professor of Radiation Oncology	Cancer Institute (WIA) Adyar, Chennai 600020 *Satellite centres* • Dr Anitha's Clinic, Ashok Nagar, Chennai (private clinic) • Unique Psychological Research and Development Centre, Velachery Chennai-42 (NGO) • Sugam Psychological Counselling and Research Centre Anna Nagar (private clinic) • Counselling Centre, National Service Scheme, University of Madras, Chennai • Presidency College, Chennai 05 • Corporation Dispensary, Kamarajar Nagar, Thiruvanmiyur, Chennai • Corporation Maternity and Child Welfare Centre, Thiruvanmiyur, Chennai • Shree Ramakrishna Institute of Oncology and Research, Coimbatore 44 • Shree Chandraprabhu Jain College, Minjur 03 • Professor of Radiation Oncology, Cancer Institute 18 Sardan Palil Road, Adyar, Chennai 600029	Tel 044-24910754 email: drpremkumari @rediffmail.com
13.	Dr Raj Kumar Senior Lecturer	Department of Respiratory Medicine Vallabhbhai Patel Chest Institute University of Delhi, Delhi 110007	Tel 011-27667102 email: rajkumar_27563 @yahoo.co.in

6.8

Fiscal Measures

Tobacco–public policy interface

In the initial decades of independent India, tobacco was considered as a source of revenue from taxes and exports rather than a harmful commodity. Even as knowledge of tobacco's ill-effects grew, it was believed, in most countries including India, that the taxes paid and other economic benefits flowing from tobacco-related activities in terms of output, employment, exports, reduced pension and social welfare benefits availed of by tobacco users, etc. easily offset the putative direct and indirect, pecuniary as well as non-pecuniary, costs arising from tobacco consumption.[65,66]

However, public as well as policy-makers' perceptions of tobacco have changed in recent years. It is an accepted principle of public economics that public policies of control have to come into play for dealing with merit/demerit goods. Even in relation to economic analysis and financial policy, there is a reappraisal of tobacco. Enough evidence is available to show that tobacco has been recognized as a universal demerit good or simply 'bad'.[67,68]

Though the Indian public policy towards tobacco has only lately explicitly accepted the need for tobacco control, it has not been entirely consistent as some of the early policy and programme initiatives for promoting the productivity and exports of tobacco and providing support to tobacco growers are still operational. Many structural features of the Indian economy were responsible for the slow and halting emergence of the tobacco control policy. The fiscal measures concerning tobacco carry the imprint of this mixed response to tobacco.

Despite increasing social disapproval, the tobacco trade has been sustained in India because of the domestic demand, international market and state promotion. The growth index of industrial production for beverages, tobacco and tobacco products is the highest compared with other industries, being 314.7 in 2003–2004, compared to the base year of 1980–1981.[69] The retained earnings of tobacco product manufacturing companies, as percentage of profit after tax, were 73% in 2001–2002.[70] The dependence of these companies on bank borrowings is low. The total sales value of major cigarette and chewing tobacco companies was Rs 99.38 billion and Rs 12 billion, respectively, in 2001–2002.[71] The advertising costs of tobacco product companies was 5.1% (of their net sales) in 2001–2002, being the highest as compared to other industries. These figures reveal the sound financial base of tobacco product manufacturing companies. In recent years, new varieties of tobacco products have entered the Indian market. As the consumption of tobacco is largely supplier-induced, an increase in the consumption of *paan masala* and *gutka* can be attributed to advertising that lures people, particularly the young.

Over the years, the Indian Government followed a dual policy towards tobacco production and consumption. On the one hand, increased taxation has been justified on the grounds of public health protection while, on the other, different government departments promoted tobacco by providing subsidies/incentives for cultivation, marketing and exports. In addition, the role played by the tobacco industry also needs to be considered, as it induces both tobacco consumption and tobacco production, through private incentives/subsidies flowing to tobacco cultivation.

Historically, tobacco-related activities have been a source of major economic gains to various stakeholders who resist tobacco control. Apart from the well-organized and powerful cigarette companies (three of them control about 92% of the cigarette market), there are millions who are engaged in tobacco farming and tobacco product manufacturing in the unorganized as well as organized sector (Box 6.14).

Box 6.14 How many people are engaged in tobacco-related livelihoods?

The estimates of tobacco-related employment vary widely, based on who is reporting them. The tobacco industry reports that employment offered by tobacco extends to nearly 35 million persons: 6 million farmers, 20 million farm workers, 4.4 million beedi workers, 2.2 million tendu leaf pluckers and 2 million traders/retailers.[72] The estimate given by the Ministry of Health and Family Welfare is, however, much lower. The number of people employed in tobacco industries was estimated to be 0.52 million in the annual survey of industries, while the 50th round of the National Sample Survey (NSS) (1993–1994) indicated that the number of people in tobacco-related employment is 3.5 million.[67] It must be recognized, in this context, that many of the persons engaged in the unorganized sector of tobacco processing and production are part-time workers. They are mostly women and children who work from home, rolling beedis for some part of the year. Similarly, the retailers too sell many products other than tobacco. The figures provided by the tobacco industry, of persons dependent on tobacco for their livelihood, appear inflated.

The conflict between tobacco stakeholders and public health advocates defines the political economy of tobacco control. Economists have convincingly shown the positive trade-off of restricting tobacco use and that there is no immediate danger to the existing economic interests as a result of measures to lower tobacco use.[67] The positive pay-off from tobacco control is substantial in terms of the multiplied effects of improvements in public health, reduced disease and death, and other externalities, which inevitably follow measures to ward off the tobacco epidemic. In addition to gains in terms of productivity and growth following from a healthier and more active workforce (better human capital), effective tobacco control contributes to cleaner streets and air quality, preservation of forests, reduced absenteeism, reduced fire hazards, healthier mothers and children; in brief, to a better quality of life. The overall impact of fiscal measures for tobacco control on economic, social and human development, including its contribution to the goal of health for all[73] in the twenty-first century century, is likely to outweigh any short term dislocation which may follow. In fact, since tobacco prevalence is found to be inversely related to the per capita income and literacy (the poor and illiterate are found to be more addicted to tobacco), the more effective the tobacco control, the lower the vulnerability of the poor to the adverse economic and social effects of tobacco use.[67]

Given the inescapable complementarity and interdependence within and across nations, it is imperative that tobacco control policies be integral parts of national health and development policies, and that national and global tobacco control policies, such as those in the fiscal sphere, are well coordinated. In the absence of such linkages in the choice and design of specific policy instruments, such as taxation, trade, health, development, research, environment policies, tobacco control policies, etc. the outcomes of intervention may even turn out to be counterproductive. For instance, tobacco taxes in one region or country may lead to the migration of production and consumption to other regions and may also encourage smuggling. Similarly, blanket fiscal incentives for increasing investment in least-developed regions may not only attract tobacco companies to such regions but even lead to malpractices such as accounting practices showing fictitious production in the regions favoured by the policy (as was seen in India as a result of a tax holiday extension to the northeast region).

A historical review of the fiscal policy on the tobacco sector in India

Some of the historical fiscal landmarks related to tobacco are enumerated below:

1. Indian states were empowered to impose sales tax for the first time under the Government of India Act, 1935. Maharashtra was the first state to impose a tax on tobacco in selected urban and suburban areas in 1938.
2. Central excise duties on tobacco were introduced for the first time in 1943 under the Tobacco Excise Duty Act, 1943. The duty, initially levied on unmanufactured tobacco

and cigars, was later extended to cigarettes in 1948. States levying local taxes on tobacco were compensated from the central excise duties. However, in 1953, the compensation to states was withdrawn and a Taxation Enquiry Committee set up to examine the incidence and suitability of central, state and local taxation. In 1956, it was agreed in a National Development Council (NDC) meeting that the sales tax levied by the states on mill-made textiles, tobacco and sugar may be replaced by additional excise duties (AED) levied by the Union Government. To this effect, the Additional Duties of Excise Act, 1957 was enacted. In 1973, smoking mixtures for pipes and cigarettes were added to the list of excisable items, followed by branded *beedis* and branded chewing, snuff and *hookah* tobacco. From 1973 to 1975, all tobacco-manufactured products were covered under the excise net. State Governments are generally opposed to the levy of AED, especially on (the highly revenue-productive) tobacco. This is because the revenue accrued from the AEDs is not shared by the Union with the States, while the basic duty is sharable with the States. For this reason, AEDs are not scaled up as regularly as the rates of the basic duty. However, the AED seems to be well established as a fiscal instrument.

3. In 1985, the Supreme Court barred the States from imposing a market fee on tobacco. However, in January 2002, the Supreme Court declared that the cultivation and sale of raw tobacco is a non-industrial activity and State Governments are free to impose agricultural market fee on their sales as in the case of any other agricultural produce.[74]
4. Duty structure (*ad valorem* and specific duties): Central excise duty on tobacco is self-assessed by the manufacturer except in the case of cigarettes, which is assessed by a Superintendent or an Inspector of Central Excise. *Ad valorem* duty, based on the assessable price of cigarettes, existed until 1984. This is a reverse method of arriving at the assessable value by deducting taxes and duties from the wholesale price. In 1985–1986, *ad valorem* duty based on the maximum retail price (MRP) was imposed (MRP–abatements = assessable value [abatement covers duty, tax, packing, forwarding, etc. and is notified by the government in terms of percentages]). Experts apprehend that *ad valorem* tax is likely to result in quality degradation, under-invoicing, tax evasion, etc. and hence, it would be desirable to introduce the tax in such a way that there is no excess burden on the consumer in terms of quality reduction. Taxation of tobacco and tobacco products should also not lead to adverse revenue effects as far as the state exchequer is concerned. As a result, *ad valorem* rates were replaced, in 1987, by a specific duty structure. Duty was levied on the basis of the type and length of cigarettes as compared to the *ad valorem* duty imposed as a fixed percentage of the price of the product taxed. A specific or volumetric duty is a tax on a unit of the physical quantity of the product. The Tobacco Institute of India (TII) has estimated the total revenue collections from tobacco under two different types of tax structure. Revenue collections have increased four times during a period of 13 years under a specific duty structure as compared to a 13-year period under *ad valorem* duty (Table 6.7). Despite a reduction in the cigarette volume during the period from 1986–1987 to 1999–2000, there was an increase in the revenue.

Continuation of specific duties on cigarettes was recommended by the Tax Reforms

Table 6.7 Changes in revenue collection[71]

Period	Duty structure	Revenue increase (Rs in million)	Change in the cigarette volume (%)
1973–1974 to 1986–1987	*Ad valorem* duty	10,690	25
1986–1987 to 1999–2000	Specific duty	47,100	21.5

Committee (1992), National Institute of Public Finance and Policy (NIPFP 1994) and Sarangi Committee (1999) in view of the substantial revenue gains and some convenience in levy.[76] There is also an argument that the levy of specific duty on tobacco products requires data on many aspects (such as the length and type of cigarettes, etc.), making the administration more complicated. Lakadawala and Nambiar stated that the specific duty structure is less price elastic, leading to revenue loss.[76] Thus, there are arguments both in favour of and against different rate regimes of tobacco taxation. Currently, the specific duty regime is being used for taxation of cigarettes and *beedis*. *Ad valorem* rates exist for other tobacco products.

5. *Ad valorem* duty was levied on branded *beedis*, chewing tobacco and other tobacco products based on the assessable price for 1993–1995, which was replaced by *ad valorem* duty based on the MRP in 1995–1996 and by specific duties based on the length and type of tobacco product in 1997–1998.
6. In 2001, the Central Government levied the National Calamity Contingent Duty (NCCD) at the rate of 15% on manufactured tobacco in view of the earthquake in Gujarat.
7. Price Stabilization Fund for tobacco: To provide financial relief to farmers of selected commodities (such as tea, coffee and rubber), including tobacco, from unfavourable price fluctuations, the Ministry of Commerce and Industry proposed the scheme of the Price Stabilization Fund on 24 July 2003. This Fund will be created with a corpus of Rs 5 billion comprising Rs 4.82 billion as a one-time contribution by the Central Government and a non-refundable initial contribution by growers of these commodities of Rs 500 each. In the initial stage, those having up to 4 hectares are proposed to be covered under the scheme.
8. A cess of 1% on cigarettes has been introduced by the Ministry of Commerce to mobilize resources for the Price Stabilization Fund.
9. Cigarettes and other tobacco products have been excluded from excise duty exemptions applicable to industrial units in the north-eastern states with effect from 22 January 2001. This was in response to criticism from public health advocacy groups as well due to the recognition that tobacco companies were misusing these concessions for evasion of excise duty in other regions.
10. The Union Government proposes to empower State Governments to levy sales tax/value-added tax (VAT) on sugar, tobacco products and textiles, between 1% and 4%, in addition to continuation of the AED (imposed in lieu of sales tax with effect from 1957) on these items. This is being opposed by the tobacco lobby.

Tobacco-related public spending

In pursuance of the objective of higher growth, 'public policy and spending-based support has been provided to tobacco cultivation and the industry'.[67] The public spending-based institutional and extension support to the tobacco subsector has been described as follows: 'The Directorate of Tobacco Development, in collaboration with State Departments of Agriculture, primarily aims at planning, coordinating and supervising development and marketing programmes of tobacco at the national level. The Indian Tobacco Development Council, constituted in 1966, serves as an advisory body for this purpose. This Directorate is implementing programmes on production and distribution of pure seeds and seedlings of tobacco, and on training in improved methods of tobacco cultivation to the farmers. The Central Tobacco Research Institute (CTRI) is conducting research on improving the yield and quality of tobacco. A multicentre project by the Indian Council of Agricultural Research (ICAR) helps in agronomy, plant breeding, soil chemistry, entomology and plant pathology, as related to tobacco. The main functions of the Tobacco Board, constituted in 1976, are regulation of production of Virginia tobacco, ensuring fair and remunerative prices to the growers, maintenance and improvement of existing markets and development of new markets for Indian tobacco outside the country. While the Tobacco Board is concentrating on Virginia tobacco, the

interests of non-Virginia tobacco are being looked after, since 1983, by the National Cooperative Tobacco Growers Federation Limited."[77]

The Tobacco Board runs a number of programmes. For tobacco farmers, it runs a programme of supply of inputs for quality and yield improvement, a programme for facilitating curing, storing, grading and for transferring advanced technology. Marketing of flue-cured Virginia (FCV) tobacco, by auction, is organized by the Board to replace the unorganized imperfect marketing marked by illegal practices in which the growers were at the mercy of the tobacco companies as price-givers. From 1984 onwards in Karnataka, and from 1985 in Andhra Pradesh, the auction system gave the growers better returns. Additional support is made available under the Price Stabilization Fund for tobacco. In addition to providing help to the farmers in production, the CTRI runs 10 research stations that helped evolve high-yielding variations of seeds. Marketing was also improved by fixing the crop size for each region separately in view of the national and international demands. In addition, a number of export promotion activities were also undertaken. To part-finance these activities, a Tobacco Board cess at 0.5% *ad valorem* and an agricultural producers' cess at 0.5% of the value of export are levied. The Tobacco Board, a statutory body, grants registration to various interests at stipulated fees. The tobacco interests also derive benefits under the Export Production Capital Goods Scheme, which enables the import of new and second-hand capital goods at 10% customs duty against the Open General Licence (OGL) rate of 25%. Many other schemes such as zero duty imports with export obligation, duty drawback scheme, market development schemes, etc. are also operated for the benefit of tobacco interests.

Clearly, India has operated a slew of positive support measures for the tobacco economy and its various stakeholders. These support measures of direct and indirect physical, technical, marketing and financial support extend right from cultivation to marketing to exports.

The thrust towards improving tobacco cultivation with public spending support, which was provided probably unmindful of the adverse effects on public health, seems to have yielded results. The 5-year moving average of the yield of tobacco doubled from about 722 kg per hectare in 1975–1976 to about 1440 kg per hectare for the 5 years ending in 1996–1997. While the area under tobacco cultivation grew at the compound rate of 0.32% per annum during this period, yield increased at the compound rate of growth of 1.5% with nearly stable acreage. Thus, it seems that the increases in tobacco output seem to have come mainly from improvement in productivity.[78] The coverage of tobacco acreage under irrigation recorded a sharp increase from under 10% around the mid-1950s to about 48% by 1995–1996. This increase can reasonably be attributed, to a large extent, to public investment. The improvement in tobacco yield can be related, *inter alia,* to the largely public-funded increase in irrigation facilities. It is clear that public spending has contributed to the growth of the tobacco subsector. Import of unmanufactured tobacco, during the period of import controls, also involved the allocation of scarce foreign exchange for supporting the tobacco industry and consumption. At the same time, tobacco products have attracted a fairly stiff tax regime. What is not clear is whether the tax on tobacco was imposed to reduce the demand for a substance, which is a serious health hazard or was merely a revenue-generating instrument.

By the early 1970s, it was becoming clear that public health considerations started entering the policy processes. The first major initiative, howsoever limited in actual results, was taken in 1975. It was largely limited to health warnings and proved insufficient.[79] The next move in this direction which gave major impetus to a multisectoral approach for tobacco control was the 22nd Report of the Parliament on subordinate legislation.[67] It highlighted the public health dimension. Later, India joined the World Health Organization initiative for tobacco control (Framework Convention on Tobacco Control [FCTC]).

Tobacco taxation

Tax policy has been advocated mainly for deterring and discouraging the use of both smoking and smokeless forms of tobacco. Its impact on the supply side has, both in theory and practice, received little attention. As for the use of the tax policy with respect to tobacco products, it is the revenue objective rather than the curtailment of tobacco addiction, which has generally and historically had an upper hand, especially in India. However, it has been shown that 'these objectives overlap to some extent and diverge otherwise'. Within a certain range, as the tax rises, government increases its revenue and achieves its goal of containing consumption, hence the two objectives converge. It is, however, possible that the tax rate, which is optimal as a deterrent factor, does not necessarily generate maximum revenue for the state.[80] This question relates basically to the trade-off between the tobacco control objective and the direct, existing economic contribution made by tobacco activities to income, employment, revenue and trade balance, etc. which often tend to make governments give preference to short-term economic gain and growth (financial consideration) over the wider and long-term socioeconomic objectives, such as healthier, more productive, active and longer-living citizens, cleaner environment, etc.

In India, as in most other countries, it is only lately that heavy and regular taxation of cigarettes and other tobacco products, as the main part of a comprehensive package of tobacco control measures to minimize the damage to health from tobacco use, is acquiring prominence, on par with, if not in preference to, the revenue objective.[81] A higher final product price of cigarettes and other similar products (by as much as one-half to three-fourths of the retail price), on account of the shifting of tobacco excise and other indirect imposts to the consumers, is expected to cause a reduction in the demand for these products, deter new recruits, especially young men and women, from getting hooked onto tobacco, and also act against resumption by quitters.

Tobacco revenue is unlikely to go down as a result of a tax-fed higher price, owing to its addictive property. The demand for tobacco, though inelastic, is certainly impacted by the price factor. An additional favourable factor is that, with the earmarking of tobacco revenue for compensating/rehabilitating poorer sections of society (such as the home-based, informal sector *beedi* workers or *tendu* leaf collectors or tobacco cultivators) or a similar health-promoting purpose, the objective of tobacco control can be attempted in a multi-pronged manner.

Specific tobacco taxes are generally preferred over *ad valorem* taxes as they allow greater flexibility and can outmanoeuvre the manipulation of tax liability by the manufacturers of tobacco products.

In India, a specific excise duty is generally imposed. The effectiveness of taxes depends on their rate. If the idea is to produce effective deterrence and not invite loss of revenue, careful crafting of the tax rate is needed. A World Bank report says that in lower-income countries, tobacco taxes 'amount to no more than half the retail price of a pack of cigarettes'.[81] It is clear that tax authorities have to base their decisions on the price elasticity of demand for tobacco products. No credible, systematic work has been done in India for estimating the price elasticity of the demand for different tobacco products. According to a study in India, the price elasticity of the demand for tobacco was estimated at −0.67 for the period 1980–1981 to 1992–1993.[67,82] Based on the World Bank's finding that 'in the middle-income and low-income countries elasticity of demand is greater than in the high-income countries', it can be inferred that middle- and low-income groups tend to have a higher elasticity of demand than higher-income groups.[81] This inference can be of use in determining the tax rates for tobacco products which have different degrees of usage among different income groups, such as *beedis, khaini, kimam*, snuff, etc. and which are more popular among the lower-income groups than cigarettes, especially cigarettes with a higher price tag.

Another factor that may help fiscal authorities determine the tax rates could be the consideration to raise revenue from tobacco to defray the social costs, at least the pecuniary social costs engendered by a given level of tobacco consumption in a society. This resembles the 'polluter pays' principle. For example, it may be useful to juxtapose the tax collection and reduction in tobacco consumption *vis-à-vis* the number of lives saved, or medical and health care expenditure avoided. Presently, no such studies seem to be available in India.

In India, *beedis*, which are favoured by the poor, pose a dilemma to the tax authorities. The *beedi*-consuming masses have a rather high opportunity cost of *beedi* smoking and tobacco chewing, owing to their low and uncertain incomes, low level of nutrition and frequent exposure to livelihood stress. However, these very factors make them excessively vulnerable to tobacco-related diseases and death. Any policy to discourage tobacco use would be welcome in so far as its effects would spare the users from disease and death in the medium- to long term, if the deterrence is reflected in lower consumption. However, a higher expenditure on *beedi* or chewing tobacco products could impose higher direct personal cost in terms of foregone consumption of necessities. A careful policy design, e.g. by combining taxes on *beedis* with countervailing, specific, sharply targeted welfare measures for the poor among smokers, based on earmarking of the revenue collected from *beedi* smokers, may probably help reconcile the conflict arising from *beedi* taxation.

Trends in excise rates

As can be seen from Table 6.8, excise duty rates have been gradually raised over time since Independence till date. Sometimes, additional levies have been devised to mobilize more revenues for the government.

Table 6.8 Trends in excise rates

Year	Rates/duties
1948–1949 (IInd Union Budget of Independent India)	• 25% on the ex-factory price of cigarettes • Duty on unmanufactured tobacco increased from 9 annas to 12 annas (*beedi* tobacco) and from 3 annas to 4 annas (FCV tobacco). The Finance Minister in his budget speech stated that *beedi* tobacco taxation can be gradually rationalized so as to increase the revenue from tobacco products.
1949–1950	• For the first time, export duty at 15% *ad valorem* was levied on cigarettes, cigars and *cheroots* in 1949, with an estimated yield of Rs 6 million As per the recommendation of the National Development Council in 1957, sales tax on sugar, textiles and tobacco was replaced by AED.
1957–1958	• As per the recommendation of the National Development Council in 1957, sales tax on sugar, textiles and tobacco was replaced by AED.
1958–1959	Commodities / BED / AED *A. Unmanufactured (Rs per kg)* 1. FCV used for smoking mixtures — 16.50 — 1.10 2. FCV not specified — 2.20 — 0.44 3. Other than FCV — 1.03 — 0.06 *B. Manufactured* 1. Cigars and *cheroots* whose value exceeds (a) Rs 25 per 100 — 12.00 — 3.00 (b) If value is less than Rs 5 per 100 — 0.50 — 0.10 2. Cigarettes (a) If value exceeds Rs 25 per 1000 — 8.90–17.40 — 3.80–8.60 (b) If value is less than Rs 7.50 per 1000 — 1.00 0.40
1963–1964	• A surcharge of 20% on basic duty was levied on unmanufacured tobacco and cigarettes in 1963.
1970–1971	• Cigarette taxes increased in the range of 3%–22% *ad valorem* depending on value slabs. Consumers of cheaper varieties (not exceeding Rs 9.50 per 1000) of cigarettes had to pay an additional amount of only 1–2 paise per packet of 10 cigarettes.

Table 6.8 (*cont.*) Trends in excise rates [72,76,83,84]

Year	Rates/duties			
1970–1971	Commodities	BED	SED	AED
	A. Unmanufactured (Rs per kg)			
	1. FCV used for smoking mixtures	27.50	5.50	1.10
	2. FCV not specified	2.50	0.50	0.44
	3. Other than FCV	1.75	0.35	0.06
	B. Manufactured			
	1. Cigars and *cheroots* whose value exceeds			
	(a) Rs 25 per 100	21.00	7.00	3.75
	(b) If value is less than Rs 5 per 100	1.20	0.40	0.15
	2. Cigarettes			
	(a) If value exceeds Rs 25 per 1000	125%	25%	24%
	(b) If value is less than Rs 7.50 per 1000	42.5%	8.5%	5%
1972–1973	• In 1972, surcharge duty levied since 1963 was merged with additional excise and basic duties.			
1979–1980	• Excise duties on unmanufactured tobacco were abolished.			
1980–1981	• A special duty on cigarettes at one-tenth of the BED was introduced.			
1989–1990	• Duty on the non-filter 60 mm and below segment was introduced with a rate of Rs 103.25 per 1000 cigarettes.			
1990–1991	• There was a increase in the duty—15 paise for the cheaper cigarettes (up to 60 mm and 70 mm for non-filter and filter, respectively) and 75 paise for the costlier cigarettes (more than 75 mm filter cigarettes), per packet of ten. The Finance Minister stated that the increase was intended to curb consumption rather than getting revenue.			
1994–1995	• While the duty rates on the lowest-length segment of cigarettes were reduced from Rs 120 to Rs 60 per 1000 cigarettes, duty rates for other length segments increased by 12%.			
1995–1996	• Duty rates continued to be the same for the 60 mm and below segment with 7% increase for other length segments.			
2003–2004	Item	Specific rate of duty per 1000 units (in Rs)		
		BED NCCD*	SED	AED
	Non-filter cigarettes			
	1. FCV used for smoking mixtures	115	37	20
	2. Exceeding 60 mm but not exceeding 70 mm	390	125	60
	Filter cigarettes			
	3. Not exceeding 70 mm	580	185	90
	4. Exceeding 70 mm but not exceeding 75 mm	945	300	145
	5. Exceeding 75 mm but not exceeding 85 mm	1260	400	190
	Beedis			
	6. Other than paper-rolled, manufactured without aid of machines	6.0	1.40	1.00
	7. Unbranded	Nil	–	–
	Rates of duty (*ad valorem*)			
	Unmanufactured tobacco; tobacco refuse			
	8. Not bearing brand name	Nil	Nil	–
	9. Other	26%	10%	–
	Cigars and *cheroots*	16%	Nil	–
	Branded chewing tobacco and paan masala-containing tobacco	34%	18%	10%

*2002–2003

Source: Jain 2004; BED: basic excise duty; SED: special excise duty; AED: additional excise duty; FCV: flue-cured Virginia; NCCD: National Calamity Contingent Duty

Table 6.9 Central excise revenue from tobacco in India (Rs in billion)[12,13,45]

Year	Cigarettes	Other tobacco products collections	Total	Revenue as % of total excise (%)
1951–1952	8	0.30	0.38	48
1961–1962	–	–	0.63	13
1971–1972	1.93	0.84	2.77	13
1981–1982	6.85	1.50	8.35	11
1991–1992	23.86	3.10	26.96	10
1997–1998	44.92	7.21	52.13	11
1998–1999	45.92	19.45	65.37	12
1999–2000	48.63	25.53	74.16	12
2000–2001	–	–	81.82	12

Source: Tobacco Board (2002); Sury MM (2004); TII, 2002; www.indiantobacco.com

Table 6.10 Tobacco and tobacco products: Excise rate structure (basic additional)[46]

Unmanufactured tobacco	Nil
Cigars and *cheroots*	Nil
Cigarettes (per thousand)	
Up to 60 mm	Rs 115
Between 60 mm and 70 mm	Rs 390
Filter up to 70 mm	Rs 580
Filter between 70 mm and 75 mm	Rs 945
Filter between 75 mm and 80 mm	Rs 1260
Others	Rs 1545
Cigarettes of tobacco substitutes	Rs 1000
Smoking mixtures for pipes and cigarettes	Rs 1000
Cut tobacco	Rs 50 per kg
Beedis	
Other than paper-rolled *beedis* non-machine work	Rs 6 per thousand
Others	Rs 15 per thousand
Chewing tobacco, *paan masala*, etc.	34%
Snuff	28%
Other branded (non-branded: nil)	28%

Trends in excise revenue

The excise revenue from tobacco amounts to nearly 12% of the total excise collection. It has increased from Rs 0.38 billion in 1950–1951 to Rs 81.82 billion in 2001–2002, but its share in total excise collections has remained between 10% and 13%, since 1961 (Table 6.9). Excise duties are levied at different rates considering the nature of the product, the class of the consumer, revenue potential for the product in question, etc.

From 1984 onwards, India switched over from *ad valorem* duties (now confined to a few smokeless tobacco items) to specific duties, among others things, to prevent manipulation by tobacco majors. Another feature of the tax imposts in India is to differentiate between rates on the basis of the length of cigarettes. Unbranded *beedis* are taxed at lower rates. For chewing tobacco, *gutka* and *paan masala,* tax rates are *ad valorem* (Table 6.10). The rate differential, along with differences in the levels of production, inevitably leads to divergent contributions by different tobacco products. Table 6.11 shows the the share of different tobacco products in the total output.

Table 6.12 shows the contribution of cigarettes to the Union revenue. It is clear that an overwhelmingly large part of the revenue is derived from cigarettes. In February 2001, the NCCD increased the tax by 15% but with diminished returns from it. The reduction in excise duty on non-filter cigarettes from Rs 120 to Rs 60 per thousand in 1993–1994 yielded a sharp increase in the revenue, but by sacrificing the tobacco control objective. Table 6.12 shows

Table 6.11 Revenue from Union excise duty (basic and additional) on tobacco products (1994–1995 to 2000–2001) (Rs in billion)[47]

Year	Cigarettes, etc.	*Beedis*	Chewing tobacco, etc.	Others	Cess on *beedi*	Total
1994–1995	27.38	2.07	1.48	0.51	0.11	31.577
1995–1996	34.24	1.66	2.11	1.68	0.15	39.877
1996–1997	39.83	2.21	2.60	1.66	0.20	46.529
1997–1998	44.34	2.71	2.76	1.34	0.20	51.376
1998–1999	48.28	2.87	3.35	1.11	0.32	55.954
1999–2000	47.90	2.69	3.48	1.04	0.52	55.66
2000–2001	51.39	2.51	4.31	1.41	0.75	60.382

Table 6.12 Effective rates of excise duty on cigarettes from March 1987 to March 1995*

Length including filter (in mm)	From 1 March 1987	From 1 July 1990	From 30 September 1991	From 15 June 1992	From 1 March 1993	From March 1994	From 1 March 1994
Non-filter							
Up to 60	*	100	110	120	60	60	60
61–70	150	175	200	250	250	270	300
Filter							
Up to 70	200	225	260	330	330	370	400
71–75	300	400	500	630	630	700	750
76–85	400	550	675	850	850	900	1000
85–1000	600	750	–	–	–	–	1300

*In 1987 and 1988 non-filter cigarettes were treated as a single category.

how the effective rates of excise duty on cigarettes with increases confined basically to filter and longer cigarettes.

The rates of taxes on tobacco products have seen frequent changes. During 1969–1970, cigarettes attracted 104.5% duty, while the impost was at 69.5% on unmanufatured tobacco. During 1960–1970, the rate of tax on unmanufactured tobacco was changed 5 times, while on manufactured tobacco it was changed 7 times. The total collection from tobacco excise was Rs 0.59 billion in 1960–1961 and increased to Rs 2.27 billion by 1970–1971. During 1960–1961, the share of tobacco revenue was 14.2% of the total excise collection, while in 1970–1971 it was 12.5%.[76]

As for the effectiveness of tobacco taxation, the use of survey-based tobacco prevalence data may not be as good an indicator of the consumption level as the National Accounts Statistics data on private final consumption data. The latter shows that both in absolute terms and also as a proportion of private final consumption expenditure (PFCE) at unchanged 1993–1994 prices, one sees a sizeable increase in tobacco consumption, though the growth path is marked by ascents and descents.

Impact of taxation on tobacco production and consumption

Although tobacco taxation in India is motivated primarily by fiscal considerations, particularly for cigarettes, it has resulted in reduced mass consumption of cigarettes. The share of cigarettes in total tobacco consumption reduced from 23% in 1971–1972 to 14% in 2001–2002. Total tobacco consumption declined from 552 million kg in 1996 to 471 million kg in 2001.[89]

Cigarette manufacturers allege that tobacco tax rates in India are discriminatory against cigarettes. Taxes range from more than Rs 100 to Rs 2000 per 1000 for different types of cigarettes based on the length and quality. The tax rate on *beedis* is less than Rs 10 per 1000. Cigarette manufacturers demand lower tax rates on cigarettes on the grounds that it distorts production and consumption, and also on the grounds that, of tobacco products, cigarettes contribute nearly 80% of the tax revenue and 80% of the export revenue (including cigarette leaf tobacco) with their share being only 14% of the total tobacco consumption.

The higher prices of Indian cigarettes have also resulted in the flooding of the market with contraband cigarettes from Bangladesh and China. These account for about 8%–10% of domestic cigarette consumption, which indicates an excise revenue loss of more than Rs 6.55 billion.[72]

A fall in the cigarette consumption, resulting from higher excise rates, coupled with a decline in tobacco exports, leads to lower prices for tobacco growers. The effects of the discriminatory tax policy on total tobacco consumption are presented in Table 6.13. The low prices of

Table 6.13 Tobacco consumption (million kg)[72]

Year	Cigarettes	Other	Total
1981–1982	86	320	406
2001–2002 (estimates)	65 –24	388 +68	453 +47

other tobacco products, as compared to higher cigarette prices, may have led to an increase in the consumption of smokeless tobacco among the youth and the poor.

During 1997–2002, cigarette production decreased by 18% with a decrease in production for domestic consumption by 11% (Table 6.14).

Table 6.14 Cigarette production (million pieces)[73,74]

Year	Quantity	Production for domestic consumption
1997–1998	106,970	105,765
1998–1999	101,001	99,569
1999–2000	97,629	95,778
2000–2001	96,642	94,626
2001–2002	87,295	–

Trends in export revenue

Tobacco exports account for about 4% of the total value of India's agricultural exports and result in substantial foreign exchange earnings (Table 6.15). India ranks fourth in the total export of tobacco and occupies the fifth place in the export of FCV tobacco, next to Brazil, Zimbabwe, China and the USA. India exports tobacco products to 100 countries worldwide. Of the 200 exporters registered with the Tobacco Board, 31 are major exporters. *Beedis* are imported by 56 countries (Tables 6.16 and 6.17).

Table 6.15 Revenue from tobacco exports[69,70]

Year	Quantity (million kg)	Value (Rs in billion)
1960–1961	47.50	0.16
1965–1966	59.30	0.21
1970–1971	49.80	0.33
1975–1976	78.46	0.98
1980–1981	90.84	1.41
1985–1986	84.10	1.72
1990–1991	83.67	2.63
1995–1996	83.94	4.21
2000–2001	115.39	9.03
2001–2002	102.09	8.88
2002–2003	100.50	10.22

The United Kingdom, Russia, Bulgaria, Italy, Japan, France, Netherlands, Germany, Nepal and Egypt are Indian's traditional markets. India has made an entry into Spain, Tunisia, Romania, Brazil, Turkey and Canada in recent years.

Chewing tobacco/*zarda* and cigarettes are the main items of tobacco product exports (in value terms), contributing 44% and 30% of export revenue from tobacco products, which constitute 32% of total tobacco exports (2001–2002). Unmanufactured tobacco exports contribute nearly 70% to the revenue, the bulk share coming from FCV tobacco (about 55%).

Subsidies to the tobacco sector

Government support to tobacco is given largely to FCV tobacco, which has a high export value. The government, through the Tobacco Board, boosts exports by facilitating participation in international fairs and exhibitions, organizing

Table 6.16 Exports of tobacco products for the past three years

Variety	2000–2001		2001–2002		20020–2003#	
	Quantity	Value	Quantity	Value	Quantity	Value
Cigarettes	2016	565.15	2883	848.83	4199	1093.79
Beedis	962	329.58	961	333.75	959	325.15
Chewing tobacco	1953	943.33	2640	1249.40	1976	999.59
Hookah tobacco paste	9546	342.30	8910	348.28	9281	330.46
Cut tobacco	907	80.39	663	71.43	1277	107.80
Others	12	2.65	19	4.57	48	5.81
Total	15,393	2263.44	16076	2856.27	17,740	2862.61

Source: Tobacco Board #: April–February 2003
Quantity in tonnes; Value: Rupees in million

Table 6.17 Exports of different varieties of unmanufactured tobacco for past three years

Variety	2000–2001		2001–2002		2002–2003#	
	Quantity	Value	Quantity	Value	Quantity	Value
Flue-cured Virginia	64,638	5099.70	57,126	4827.90	59,650	4857.94
Burley	9810	651.05	11,036	558.47	13,543	746.58
Sun-cured *natu*	6670	292.47	5354	241.24	3055	127.96
Top leaf/*jutty*	4923	206.25	1734	77.27	2020	74.13
Lal *chopadia*	6869	239.89	6026	166.52	5182	143.04
Judi	2656	64.97	2287	45.35	1403	32.82
Others	4971	216.02	2447	112.68	2061	108.62
Total	1,00,537	67,703.38	86,010	6028.86	86,914	6091.12

Source: Tobacco Board #: April–February 2003
Quantity in tonnes; Value: Rupees in million

Box 6.15 From Parliamentary Proceedings: Tobacco exports[90]

Export of tobacco products

(Lok Sabha, Unstarred Question No.5943, (H), May 2, 2003)

The Tobacco Board has projected exports for tobacco and tobacco products for 2003–04 at the same level as for 2003–03, viz. around 115,000 tons valued at Rs 9.8 billion. For the entire Tenth Plan period, the projected figures are 686,300 tons valued at Rs 57.69 billion.

Steps taken to enhance the exports of tobacco include, inter alia, reorientation of production of tobacco to meet changing international demands, enhancement of quality and productivity levels, monitoring control of pesticide residues, aligning grading to international standards, sponsoring of trade delegations to potential importing countries, participation in tobacco fairs, etc.

(Answered by the Minister of State in the Ministry of Commerce and Industry)

Box 6.16 From Parliamentary Proceedings: Tobacco Board

Tobacco production

(Lok Sabha, Unstarred Question No. 5848, May 2, 2003)

The Tobacco Board was constituted on 01.01.1976. The Tobacco Board regulates crop size in order to ensure remunerative prices to growers and operates auction platforms to enable its marketing. It also helps growers by facilitating the supply of seeds, fertilizers, pesticides and spraying equipment, analysis of soil and water, popularizing high yielding and disease resistant varieties, adopting measures to reduce the residue levels in tobacco, etc.

(Answered by the Minister of State in the Ministry of Commerce and Industry)

delegations of tobacco traders and exporters to various countries, and discussion at bilateral official meetings. The Board maintains a balance between the demand and supply of tobacco by regulating production, arranging auctioning of produce, and identifying demand from exporters and domestic industries.

Subsidies on tobacco cultivation

Tobacco cultivation seems to be guided mainly by economic advantages. A study carried out by Panchamukhi *et al.*, in a *beedi* tobacco-growing area of Karnataka, revealed that market conditions of high price and assured demand are more powerful determinants of the farmers' decision to grow tobacco than the suitability of land in the region for growing tobacco.[91]

Subsidies may be direct or indirect cash incentives or benefits accruing to farmers due to government initiatives. Direct subsidies to tobacco farmers are in the nature of cash incentives and facilities extended specifically for promoting tobacco cultivation. Indirect subsidies include general subsidies given by the government for irrigation, fertilizers, credit and power. These general subsidies are also enjoyed by other farmers. However, credit subsidy may be enjoyed to a larger extent by tobacco farmers as they get easy credit on soft terms and on priority basis. Growers of FCV tobacco receive

direct subsidies and facilities under extension programmes from the Tobacco Board. Other tobacco growers benefit from the research and extension services of agricultural research centres, working under the University of Agricultural Sciences in Karnataka and Gujarat, with grants from the ICAR. For FCV tobacco growers, the Board provides subsidy for balanced fertilization, nursery fumigation, pests and disease control, supply of coal, tarpaulin for the insulation of barns, purchase of sprinkler sets, improving grading through community grading centres, etc. In addition, FCV farmers benefit from regulation of crop production, auctioning of produce, research on new varieties and the market, supply of quality seeds, demonstration programmes, etc. Tobacco industries also provide direct incentives for FCV tobacco through crop development, market intervention and prize awards. *Beedi* and other tobacco-growing farmers benefit from research on new varieties, the supply of quality seeds, technical guidance on pesticide use and application of manure, etc.

Table 6.18 presents farm subsidies provided by the Board in recent years, particularly for FCV tobacco. The subsidy per kg of tobacco is very low, being less than 2 paise. There has been a decline in the quantum of subsidy over the years. This reflects the changing policy of the government, which is gradually tending towards withdrawing subsidies to tobacco cultivation. It should be highlighted here that it is not the value or quantum of subsidy that determines or promotes FCV tobacco cultivation, but the support for marketing and higher prices that sustains tobacco cultivation. Details of indirect subsidies to tobacco growers are not available at the micro level. A recent study by Panchamukhi *et al.* on the estimation of subsidies to tobacco cultivation reveals that indirect subsidies (credit, fertilizer, power, irrigation) to all types of tobacco amounted to Rs 571.10 per acre (2001–2002) in the tobacco-growing states of Andhra Pradesh, Karnataka and Gujarat. The direct asset and input subsidy, which is mainly for FCV tobacco, is Rs 16.60 per acre.[91]

Hidden subsidies to tobacco interests

Public spending-based support is provided to tobacco cultivation, marketing, exports and industry in various forms and through the agencies of various official bodies. It is not easy to arrive at the total public spending. Similarly, there are many difficulties in obtaining data on public spending at such a disaggregated level. However, given the high costs caused to the smokers as well as other users of smokeless tobacco and to the rest to society, such expenditure (though of value to the growers and other tobacco interests) is an addition to the social costs of tobacco and also a hidden subsidy to the tobacco interests. Despite the availability of a good deal of information on the tobacco-support activities of the government, these facts have neither been collated nor analysed. The policy implications of this factor also need to be worked out.

Private (tobacco industry) incentives to tobacco cultivation

The above discussion gives an account of the provision of subsidies and incentives to tobacco cultivation that flowed through government agencies. However, the discussion on subsidies would be incomplete if the benefits extended by

Table 6.18 Farm subsidies (direct) on flue-cured Virginia tobacco[85,91]

Year	Subsidy (Rs in million)	Value of the crop (Rs in million)	Subsidy per hectare (Rs)	Subsidy per kg of production (Rs)
1998–1999	89 (0.1%)	7014	48.51	0.04
1999–2000	59 (0.1%)	6127	32.64	0.03
2000–2001	13 (0.6%)	220.9	31.06	0.03
2001–2002*	40.18 (3.4%)	120.0	29.93	0.03

*Provisional

the tobacco industry towards cultivation and marketing of tobacco are not included.

Incentives or hidden subsidies may not be in terms of grants or kind. They may be expenditure on services resulting in social benefits accruing to all those residing in the tobacco-growing region or elsewhere. Expenditure on such services indirectly benefits the funding agency, i.e. the tobacco industry itself. According to the Indian Tobacco Company (ITC), it spent Rs 6.5 million and Rs 3.4 million during 2000–2001 and 2001–2002, respectively, towards the construction of bus sheds, school buildings, primary hospitals and low-cost housing for the poor. The ITC has taken up online information services for traders and farmers, training in aqua farming in Andhra Pradesh, social forestry, watershed development and women's empowerment through the facilitation of micro-credit. These activities largely benefit farmers in Andhra Pradesh and Karnataka, from where the ITC gets FCV tobacco for cigarette manufacturing.

Tobacco growers get credit from tobacco traders and manufacturers for various purposes other than tobacco cultivation. Accurate information on these aspects is, however, not available from either the industries or farmers' households.

Subsidies/facilities to the tobacco industry

The tobacco industry does not receive any direct subsidy from the government or elsewhere. However, the supply of tobacco, particularly FCV, is assured as the Tobacco Board plays a major role in the production and auction of tobacco. The establishment of cigarette companies and tobacco products requires compulsory licensing and cigarettes are the target of heavy excise duties. For small-scale sector industries (SSI), the expenditure limit for excise purposes has been raised to Rs 5 million from the earlier limit of Rs 3 million. The clearance between Rs 5 million and 10 million shall be charged at a flat nominal rate of 5%. The tobacco industry, particularly the *beedi* sector, benefits from concessions under the SSI promotion policy of the government. Central excise duty is self-assessed by manufacturers of *beedi* and other tobacco products, excluding cigarettes.

Subsidies/facilities for tobacco exports

Exports of tobacco are under the purview of the Open General Licence (OGL) policy. Some incentives provided by the Government of India for facilitating tobacco exports through the provision are given below.

1. Seventy per cent of tobacco export profits were exempted from tax during 2000–2001.
2. Under the Duty Entitlement Pass Book (DEPB), exporters are eligible to claim credit at the specified rates on the free on board (FOB) value of exports made in freely convertible currency, i.e. DEPB on post-export (Box 6.17). Exporters holding DEPB credits are entitled to the import of any item, barring those included in the negative list of imports, without payment of any customs duties against the credits registered in the DEPB. Exports made under the DEPB scheme are not entitled to duty drawback.
3. Tobacco exports are free from quota, minimum export price and quality restrictions. Export of these items is allowed freely under OGL, subject to the condition that such exporters are registered with the

Box 6.17 Duty Entitlement Pass Book (DEPB)

	Rate of credit (as % of FOB value)
1. Cigarettes packed in consumer packs	10%
2. Acetate cigarette filter rods (24.5 mm X 120 mm)	10%
3. Tobacco/sweet tobacco/ tobacco paste packed in the relevant packing material	2%

FOB: free on board

Board in accordance with the Tobacco Board Act.

4. Import content for export of tobacco: Packaging materials are imported with 80% of the requirement being met locally.
5. There is exemption of export duty on unmanufactured tobacco.
6. Unmanufactured tobacco is exempted from compulsory pre-shipment inspection by any government agency, if the exporter has an authorized letter from the overseas buyer stating that the buyer does not want pre-shipment inspection, and the said letter is filed by the exporter before the customs authorities.
7. The Commerce Ministry of the Government of India under the Market Development Assistance (MDA) Fund provides financial assistance in the form of grants for activities such as on sales-cum-study tours, participation in export fairs/exhibitions abroad, advertising in foreign media and on publications for circulation abroad. The Ministry also implements research and production development programmes, opening of offices and setting-up of warehouses abroad.

Smuggling and effectiveness of tax policy

Tax-led reduction in the demand for tobacco products has to contend with some escape routes that tobacco interests may avail of. Smuggled cigarettes from such countries may have lower prices on account of either no tax or lower tax rates or other factors pertaining to supply-side factors, or as a result of deliberate policy by cigarette companies (e.g. for pre-testing a brand). This can reduce the effectiveness of tax-led tobacco control. While the prevalence of smuggling can be confirmed by many means, it is an uphill task to estimate its volume. The tobacco industry generally complains of widespread smuggling.[93]

One possible method of estimating the quantum of smuggling is to estimate the likely size of tobacco consumption based on the estimated prevalence rate of tobacco use and compare such an estimated consumption figure with the domestic legal availability of tobacco products (calculated as [domestic production + legal imports] – [legal exports of tobacco products]). The difference between the estimated consumption and domestic legal availability may be taken to suggest the volume of smuggled tobacco products consumed in a country. This figure, if negative, would indicate that more is smuggled out from the country than is smuggled in. One difficulty that may reduce the reliability of such an estimate is the presence of carry over stock with producers and traders. However, if there are no special reasons to believe that a departure from the normal stock maintenance behaviour has occurred over time, the estimate of the quantum of smuggling (worked out on the basis of the procedure described above) would not be wide off the mark. In any case, the authorities have to organize as much reliable information about the destination and sources of smuggled cigarettes as is possible. Evidently, it is possible that a country may be both a source as well as a destination of contraband cigarettes. Some idea about the volume of smuggling may be arrived at on the basis of the seizures of contraband by enforcement agencies. However, the detection of smuggling does not always provide a clear indication of its magnitude.

It is difficult to be categorical about how far anti-smuggling policies and the determination of domestic and cross-border tax imports are dependent on the estimates of smuggling volume. Smuggling does tend to lower the effectiveness of demand reduction through imposition of shiftable taxes on domestic and imported cigarettes. In addition to smuggling, unauthorized movement of cigarettes from the factory gates (evasion of excise) also reduces the effectiveness of tobacco control. In India, excise evasion has also been reported, especially owing to the presence of some tax-exempt regions. The tax holiday granted to the northeast region led to its abuse and facilitated large-scale tax evasion. Tobacco products manufactured

elsewhere in the country were falsely labelled as being manufactured in the tax haven of the northeastern region, resulting in evasion of excise tax.

It is on account of such factors that international cooperation and 'symmetrical measures' are considered useful for sharpening the thrust of tobacco control.[78]

However, price differentials alone do not cause smuggling. The craze for some well-known, highly rated brands, as well as the demonstration effect of supposed high-class consumption tends to become grist to the smuggling mill. It has been reported that powerful organized criminal networks carry on cigarette smuggling on a large scale and ongoing basis. Huge profits entailed by such smuggling, added to an extent by cross-border travel and free baggage allowance, make smuggling a feasible and lucrative 'business'.[81] In so far as smuggling adds to the supply of cigarettes, it would tend to reduce prices and increase the variety-added consumption of cigarettes.

Tobacco interests, while at times accused of being hand in glove with the smuggling processes, generally complain of it being a threat. Indian companies complain of smuggling from Nepal, Myanmar, Bhutan and Bangladesh, etc. putting the value of Rs 5000 million as the estimated annual volume of smuggling (the source and method for arriving at the estimate remain unspecified). The chairman of India's largest cigarette company, ITC, claimed that this contraband trade is growing at an annual rate of 20%.[67] It appears that cigarette smuggling is basically part of a phenomenon of smuggling but is spurred on by addiction to tobacco, preference for popular foreign brands and, of course, the price differential. This phenomenon certainly compromises the effectiveness of fiscal measures for reducing tobacco consumption and calls for strong countermeasures at both the national and global levels.

Rethinking policy initiatives

Fiscal measures in India never included a comprehensive policy to systematically curb the consumption of tobacco. The fiscal exercise has been a routine increase in excise duties, year after year, in almost every budget. The government never attempted to determine the extent of reduction in consumption nor consider further increase in taxes based on any price elasticity study.

A reduction in tobacco taxation is sometimes advocated to protect the tobacco industry. It is also argued that reduction in the tax burden of the tobacco sector would promote the demand for tobacco and tobacco products, thereby sustaining the tobacco industry and also encouraging the flow of revenue to the government. However, it is unethical to reduce taxes to promote smoking for the protection of the industry and to increase revenue collection, in view of the proven adverse health effects of tobacco consumption.

Chewing tobacco is one of the main causes of mouth cancer. *Beedis*, which are cheaper and consumed largely by the poor, have a higher tar content than cigarettes. In the light of these considerations, there should not be marked differences in tax policies for various types of tobacco products. Otherwise, there may be a shift from high- to low-priced tobacco. It is necessary to work out a strategic plan for covering the unorganized sector also under the tax regime. In addition, there is a necessity for working out a tax–price–demand analysis for tobacco products to frame an appropriate fiscal policy for the t obacco sector.

Under the World Trade Organization (WTO) regime, it is argued that world trade in tobacco might increase as market access stipulation specifies that member countries should import a minimum of 3%–5% of domestic consumption. India is one of the countries importing less than the stipulated quantity. India will have to import

Table 6.19 The 'Mini' experiment: Lowest length cigarette segment analysis (sales in billion sticks, revenue in Rupees in billion)[95]

Year	Sales		Excise revenue	
	Mini	Total industry	Mini	Total industry
1989–1990	0.7	83.5	0.07	19.25
1990–1991	1.0	86.1	0.10	20.84
1991–1992	0.8	85.7	0.10	24.50
1992–1993	0.7	80.8	0.8	27.68
1993–1994	0.6	78.8	0.07	27.40
1994–1995	5.4	84.3	0.33	30.75
1995–1996	15.1	94.9	0.91	34.27
1996–1997	18.9	102.3	1.42	42.77

around 24 million kg of tobacco under the WTO agreement. The world market for tobacco is, however, not increasing and India's share in the world tobacco trade has decreased from 2% in the 1970s to 0.5% in 2001.[94]

Article 17 of the FCTC, steered by the World Health Organization (WHO), states that efforts shall be made with the mutual cooperation of different agencies to promote economically viable alternatives for tobacco workers, growers and individual sellers. Article 22 also states that parties shall assist tobacco growers in shifting agricultural production to alternative crops in an economically viable manner. The Framework Convention Alliance (FCA), an alliance of over 160 NGOs from around the world, which supports the FCTC, has argued for ending all forms of subsidy to tobacco. These developments call for a rethinking on India's approach towards subsidies for tobacco and tobacco promotion. Subsidies may have to be diverted to promoting alternative livelihoods, in terms of income support and infrastructure development for the marketing of alternative crops.

It emerges from the analysis of the Union tobacco taxation policies that neither the choice of rates, nor the garnering of tax revenue seem to show that there was a conscious attempt to control tobacco consumption. Tax rates appear to have been changed for revenue considerations, which vary every year, and not with a systematic approach to use tax as an instrument for tobacco control. This is illustrated by the case of mini-cigarettes. The sale of mini-cigarettes increased from 0.6 billion to 1 billion sticks between 1989–1990 and 1993–1994. However, when the tax rate was reduced by 50% in 1996–1997, the sale of mini-cigarettes jumped to nearly 18.9 billion sticks, without any decline in the production of or revenue collection from *beedis* or overall cigarette production or revenue (Table 6.19).

This kind of information does not indicate any conscious or systematic policy design for restraining tobacco production or consumption. Thus, compared to the pursuit of revenue for the public exchequer, the objective of tobacco control may well be considered largely incidental. From the point of view of the revenue objective, tobacco, with its inelastic demand and frivolous character, has generally been a hot favourite of revenue-hungry finance ministers. Certain features of tobacco taxation, such as not including cigars and *cheroots* or leaving a part of *beedi* production out of the tax net, show that demand reduction has not been a live concern with fiscal managers. Relatively low tax realization from *beedis*, the poor man's puff, is an example of an unkind kindness. This immediate outgo from the poorer citizens' pocket is considered more of a holy cow than the adverse health condition and long-term greater financial outgo. It can thus be said that reducing tobacco consumption by means of tax measures does not seem to have been a part of the policy architecture in India. True, in 2001, an additional impost in the form of the NCCD was clamped, which increased tobacco tax by 15%.[96] However, there is no evidence of it being realized that tobacco consumption itself is no less of a calamity. Clearly, it is necessary to relate

tobacco taxation to tobacco control in a far more explicit manner than has been the case so far.

In this connection, two additional points need consideration. Tobacco has received, as seen above, a good deal of explicitly articulated public support. A Government of India publication in 1997 asserted that, 'although it [tobacco] occupies less than 0.3% of the total cropped area in the country, it contributes the highest revenue to the national exchequer among all the agricultural commodities. Hence, it is considered as 'Kamdhenu' of the country besides, tobacco and tobacco industry are labour-intensive and provide employment, directly or indirectly, to millions of people in the country. It is, therefore, needless to emphasize the importance of tobacco to a developing country like India.'[77]

It is now time to discard such attitudes and go in for policies directed at discouraging the supply of tobacco, by removing the incentives and imposing effective fiscal disincentives. The impact of higher taxes is presently felt only on a small segment of the tobacco industry. Even this burden is passed on to the consumer. The tobacco industry currently faces hardly any disincentives to restrain further investment and slow down the rate of growth of tobacco products. This leaves the tobacco industry with enough incentives to continue committing ever more resources for enticing newer recruits to tobacco addiction and make investments for increasing the supply of a commodity designed to deliver nicotine. This unregulated play of market forces is certainly injurious to community health. Hence, a set of measures to restrain the growth in supply of tobacco products is likely to be more effective than relying solely on demand management steps. As a demerit good, a differential treatment given to the investment, production and profits from tobacco products would surely make a lot of sense.

A convincing case exists for doing away with all promotional public activities for tobacco and for using fiscal measures to progressively downscale this deadly trade with the objective of ultimately eliminating it.

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* *Kamdhenu* is the divine cow, of Hindu mythology, whose yield is bountiful and limitless.

6.8 FISCAL MEASURES

KEY MESSAGES

- Tobacco taxation is discriminatory and covers only the organized sector and this too not uniformly. It is necessary to work out a strategic plan for covering the unorganized sector as well also under a tax regime.
- Increasing the tax base of tobacco by covering all types of tobacco products, irrespective of the turnover, is essential to stop people shifting from costlier to cheaper products. Those who profit from tobacco products should pay taxes while those who consume it have to be discouraged from using it. There should not be significant differences between the tax policies for various types of tobacco.
- The prevailing tax system is not in accordance with the consumption pattern. The tax contribution from non-cigarette products is very low (around 20% of total tobacco excise collections) as compared to their share in consumption (more than 80%). Moreover, there is no stability or consistency in the tax system being adopted for tobacco.
- A tax–price–demand analysis should be worked out for tobacco products to frame an appropriate fiscal policy for the tobacco sector.
- There are arguments against and in favour of both specific duty and *ad valorem* duty structures for cigarettes. In the specific duty structure, there is less scope for tax evasion and lesser chances of passing the burden to consumers.
- States are not in favour of additional excise duties for tobacco. Rates of additional excise duties are not raised as regularly as those of basic duties.
- The Indian Government has not yet come out with a policy that addresses both tobacco production and tobacco consumption from the perspective of tobacco control. While increased taxation is justified on the grounds of public health concern, the government is also promoting tobacco by providing incentives for cultivation, marketing and exports.
- An analysis of the fiscal policy of the government needs to consider not just the cash subsidies but also other kinds of support that flow from different government departments for the promotion of tobacco cultivation and production. In addition, the role played by the tobacco industry also needs to be considered as it induces both tobacco consumption and tobacco production.

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7

Tobacco Control: What Works?

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The recent enactment of legislation for tobacco control and ratification of the Framework Convention on Tobacco Control (FCTC) by India should only be regarded as steps which mark the beginning of a major national effort to deal effectively with an active and increasingly menacing threat to health and development. The follow up process requires a comprehensive multicomponent strategy which is implemented through coordinated multisectoral measures.

Such a strategy should combine measures for demand reduction as well as interventions intended for reduction of supply. In economic theory, demand reduction usually leads to supply reduction, as the market learns to adapt to the changing consumer preferences. This is true, to a considerable extent, also of tobacco. Hence the great emphasis laid in most policy recommendations on the positioning of a package of demand-reduction measures as the keystone of a tobacco control strategy. However, the tobacco trade does not represent a perfect market where demand–supply relations follow such a logical and predictable course. The practice of tobacco consumption itself is highly supplier driven and aggressively promoted to entice and entrap the unsuspecting consumer. Furthermore, the volitional choice of consumers is subverted initially by misleading messages and later by the unyielding grip of an unshakeable addiction. Hence, the requirement of some supply-side action to supplement demand-reduction measures to achieve early and effective tobacco control (Fig. 7.1).

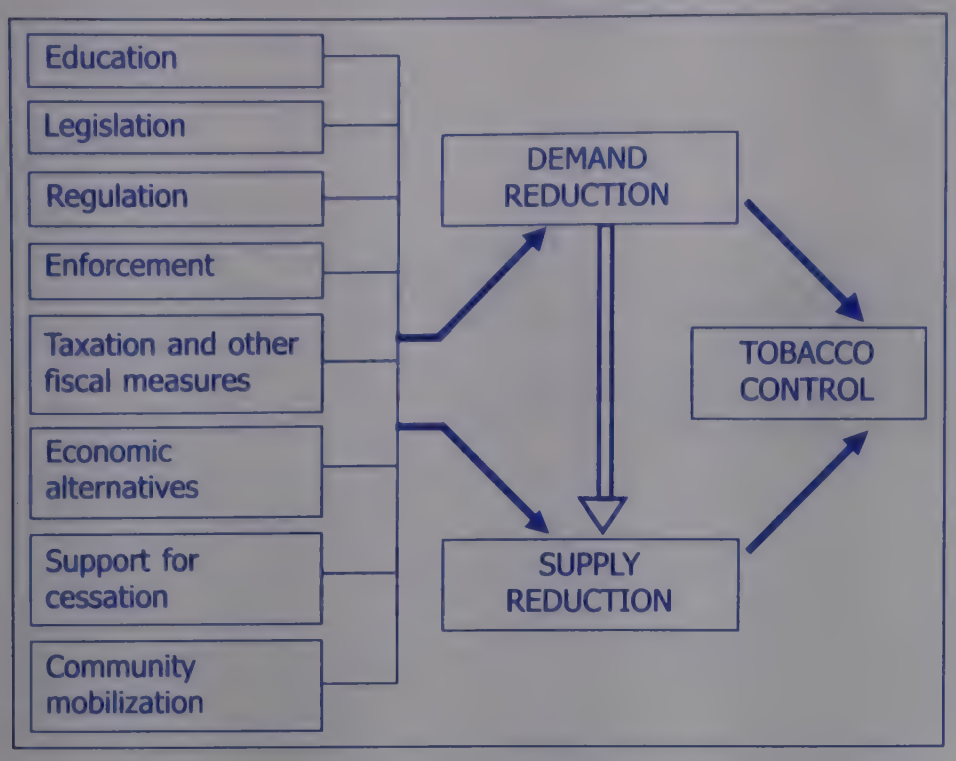


Fig. 7.1 Tobacco control needs actions to reduce demand and supply

Such measures involve interventions at multiple levels. Policy-level interventions would include levy of taxes (to raise prices of tobacco products and act as a disincentive for purchase, especially to youth on the threshold of tobacco experimentation), regulation of tobacco products (for constituents, emissions, health warnings and misleading health claims) and measures to reduce supply (ban on sale to youth, curbs on smuggling and programmes to aid tobacco farmers and workers to switch over to alternative livelihoods).

Interventions at the community level would involve programmes for empowering people, especially vulnerable sections, with the knowledge, motivation and skills required to abstain from or abandon the use of tobacco habit. These would also require the creation of suitable environments to stimulate, support and sustain healthy lifestyle choices (such as tobacco-free norms at schools, worksites, homes, etc.).

At the level of the individual, the interventions would focus on behaviour change, especially aimed at tobacco cessation. This requires the availability of services ranging from counselling to de-addiction therapies and an affordable supply of pharmacological agents for those who need it. It must, of course, be clearly recognized that cessation by individuals is also greatly facilitated by interventions at the policy level and the community level.

This chapter opens up a consideration of these action pathways which lead in the direction of tobacco control. It reviews the rationale for specific interventions, appraises the available evidence from the global arena, examines the Indian context and develops recommendations for appropriate action in each of these areas. These are intended to provide the basis for informed action by all segments of society wedded to the vision of a tobacco-free India.

7.1

Policy Interventions: Taxation

The theory of tobacco taxation

Governments have three reasons to raise taxes on tobacco:

- To deter consumption
- To correct for externalities such as health care costs
- To raise revenue.

The law of demand in economics states that *ceteris paribus*, if the price of a commodity rises, the quantity demanded of the commodity will fall. How does this law apply to tobacco? It is instinctive to argue that, given its addictive nature, tobacco would be an exception to the rule. However, a large number of econometric studies that have examined the relationship between prices and tobacco use using various time series, household- and individual-level datasets have reached the unequivocal consensus that higher prices are effective in reducing tobacco use, especially among the young and the poor.

The summary measure used to document this is that of elasticity of demand. The responsiveness of the quantity demanded by consumers to changes in the price is called the price elasticity of demand. For example, if a 10% increase in price leads to a 5% fall in the quantity demanded, the elasticity of demand is −0.5. The higher the responsiveness of consumers, the greater the elasticity of demand.

In terms of policy decisions, two considerations emerge. One, an increase in the taxes on tobacco products (resulting in an increase in price) leads to a fall in the demand for these products, thereby reaching a positive public health outcome. Second, most governments see taxation on tobacco products (and similar products such as alcohol) as a source of revenue.

Policy-makers are often apprehensive of the fall in consumption that is expected to come about as a result of a rise in the taxes on tobacco products. The fear is that this will generate less revenue. However, this fear is unfounded, at least in the short- to medium term. This is because the demand for tobacco is relatively inelastic, i.e. a fall in the consumption of tobacco will be less than proportional to the rise in price. In the long run, though, the effect on revenue is uncertain.

The following are the caveats of the elasticity analysis:

- The responsiveness changes with the age of recruitment to tobacco (the evidence is of a much higher Ep [price elasticity] among young smokers).
- The responsiveness changes with income levels. (The lower socioeconomic groups respond more by reducing consumption.)
- The responsiveness changes with the availability of substitutes (although scratchy evidence suggests high brand and product stickiness of consumers).
- Besides income and price, factors such as education and urbanization also affect the consumption of tobacco.

International evidence

The World Bank reviewed the evidence in a 1999 report and concluded that a 10% increase in the prices of tobacco products would reduce their use by about 4% in developed countries and by about 8% in developing countries.[1,2]

The impact of a 10% increase in cigarette taxes on the consumption of and tax revenues generated by cigarettes was estimated for 70 countries, assuming the short run Ep for cigarettes to be −0.4 for high-income countries and −0.8 for low- and middle-income countries.

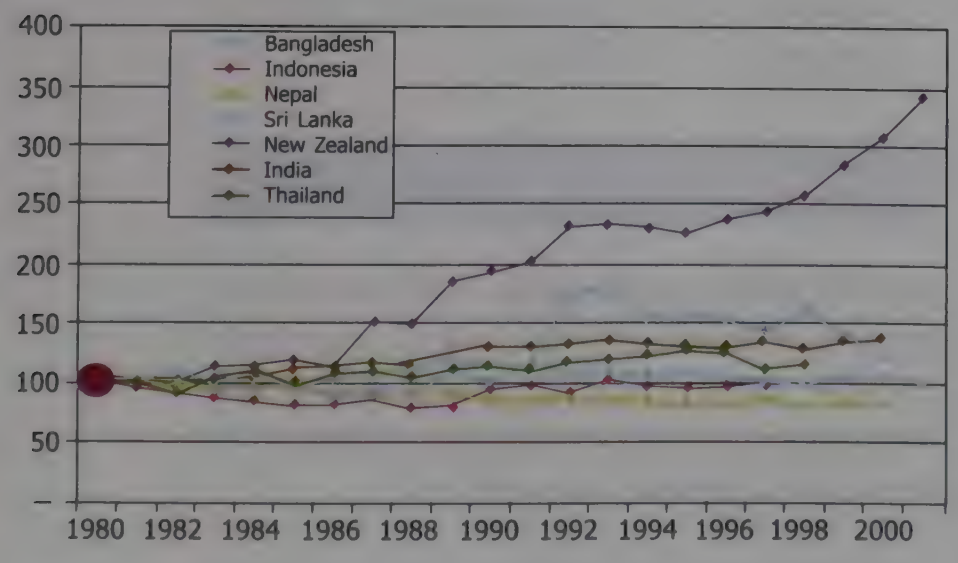
Table 7.1 Impact of increasing cigarette taxes on the consumptions of and revenues generated by cigarettes

Countries	Change in cigarette consumption (%)	Change in cigarette tax revenue (%)
Bangladesh	–2.40	7.36
China	–3.23	6.45
Nepal	–5.86	3.56
Sri Lanka	–1.91	7.90
France	–3.00	6.70
Japan	–2.40	7.36
Singapore	–2.92	6.79
UK	–3.12	6.57
USA	–1.20	9.68

The results showed that while there could be a marked increase in cigarette taxes in all countries, the percentage tax revenue in low- and middle-income countries would be somewhat less (4.8%) as compared with high-income countries (7.2%) due to the relatively larger decline in the consumption in these countries (3.5% compared to 2.24% in high-income countries) and the lower share of cigarette prices accounted for by excise duty. Data from select countries belonging to different income categories are summarized in Table 7.1.

Evidence from South-East Asia[3]

Figure 7.2 presents trends in the real price of tobacco products. The data for the consumer price index (CPI) for tobacco products were obtained from national statistical agencies or central banks, and were deflated by the country's CPI for all items. Data for New Zealand, which has actively used tobacco price policy as a health instrument, are also presented to allow some comparison with a 'best practice'. With the exception of India and Thailand, from 1988 onwards, real prices for tobacco products remained surprisingly stable during the 1980s and 1990s in the South-East Asian countries for which data are available. In Bangladesh, real prices increased in the early 1990s to subsequently decrease to almost their original level.



(Index 1980=00)[3]

Fig. 7.2 Trends in the real prices of tobacco products (1980–2000)

Source: National Statistics Agency; World Health Organization South-East Asia Regional Office (WHO-SEARO); International Monetary Fund (IMF)

Figure 7.3 presents trends in the 'costliness' of tobacco products. Costliness is calculated by dividing a country's per capita gross domestic product (GDP) by relative prices of tobacco products. A falling costliness index indicates that tobacco products are becoming more affordable or less costly. The data show that tobacco products in India, Indonesia, Nepal, Sri Lanka and Thailand became about 50% more affordable during the past two decades, while there was substantial fluctuation in Bangladesh, although tobacco products were still more affordable at the end of the 1990s than they were at the beginning of the 1980s. These trends are in sharp contrast to those observed in New Zealand, where real prices more than tripled and

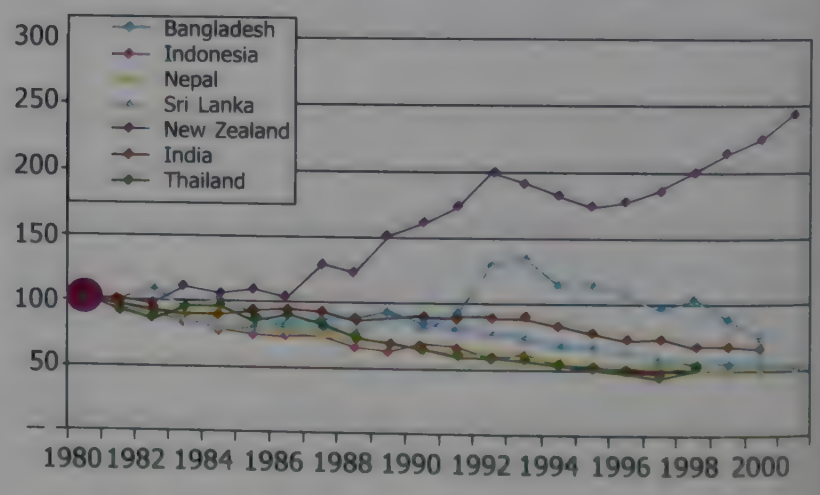


Fig. 7.3 Trends in the 'costliness' of tobacco products (1980–2000)

Source: National Statistics Agency; World Health Organization South-East Asia Regional Office (WHO-SEARO); International Monetary Fund (IMF)

Table 7.2 Excise duty structure on cigarettes

Description	2001–2002 TOTAL = BED+AED+NCCD (Rs per 1000)	2000–2001 TOTAL = BED+AED (Rs per 1000)	1999–2000 TOTAL = BED+AED (Rs per 1000)	1998–1999 TOTAL = BED+AED (Rs per 1000)
Non-filter cigarettes				
Not exceeding 60 mm in length	78+37+20 = 135	78+37 = 115	75+35 = 110	68+32 = 100
Exceeding 60 mm but not exceeding 70 mm	265+125+60 = 450	265+125 = 390	252+118 = 370	252+118 = 370
Filter cigarettes				
Not exceeding 70 mm in length	395+185+90 = 670	395+185 = 580	374+176 = 550	374+176 = 550
Exceeding 70 mm but not exceeding 75 mm	645+300+145 = 1090	645+300 = 945	612+288 = 900	612+288 = 900
Exceeding 75 mm but not exceeding 85 mm	860+400+190 = 1450	860+400 = 1260	816+384 = 1200	816+384 = 1200
Other cigarettes	1050+495+235 = 1780	1050+495 = 1545	1000+470 = 1470	1000+470 = 1470

BED: basic excise duty; AED: additional excise duty; NCCD: National Calamity Ccontingent Duty
Source: Department of Revenue, Government of India

Table 7.3 Duty rates on other tobacco products

	Duty rates 2000–2001			Duty rates 2001–2002			
	AED	BED	SED	Surcharge	AED	BED	SED
Paan masala containing tobacco *(gutka)*	16%	24%	Nil	16%	10%	16%	18%
Paan masala without tobacco	16%	24%	Nil	16%	23%	16%	Nil
Chewing tobacco	16%	24%	10%	16%	10%	16%	18%
Beedis	Rs 4.6/1000	Nil	Rs 1.4/1000	Rs 4.6/1000	Rs 1.0/1000	Nil	Rs 1.4/1000

AED: additional excise duty; BED: basic excise duty; SED: surcharge on excise duty
Source: Department of Revenue, Government of India

affordability was considerably reduced between 1980 and 2000.

The Indian context

In February 1987, India shifted from the *ad valorem* duty structure to the specific duty structure for taxation. Tables 7.2 and 7.3 indicate the existing excise duty structure for cigarettes and other tobacco products. In addition, many states levy a luxury or entry or toll tax on tobacco products (Table 7.4).

1. With effect from Budget 2001–2002, a National Calamity Contingent Duty (NCCD) has been imposed on all tobacco products, including cigarettes.
2. The manufacturer of final products is allowed to avail of credit of the NCCD paid on inputs but this credit shall be utilized only towards the payment of the NCCD.

According to a report on the smokeless tobacco industry in India, Blackstone (India) Market Facts mentions that although most *gutka* manufacturers are registered, yet they declare only about 10% of the production; the remaining 90% escapes excise duties.[4]

Table 7.4 States levying luxury/entry tax on tobacco products[5]

State	Year	Type of tax	Rate (%)
Madhya Pradesh	1976	Entry tax	3
Bihar	Apr 1993	Entry tax	5
Manipur	Apr 1993	Entry tax	3
Kerala	Apr 1994	Luxury tax	5
West Bengal	Apr 1994	Luxury tax	10
Maharashtra	May 1994	Luxury tax	8
Rajasthan	May 1994	Luxury tax	7
	Oct 1999	Entry tax	1.5
Gujarat	Aug 1995	Luxury tax	5
Orissa	Aug 1995	Luxury tax	6
	Dec 1999	Entry tax	1
Andhra Pradesh	Aug 1996	Luxury tax	5
Karnataka	Mar 1997	Luxury tax	4
Assam	Apr 1998	Luxury tax	10
Tamil Nadu	Mar 1999	Luxury tax	5
Jammu and Kashmir	Mar 2000	Toll tax	4
Uttar Pradesh	Apr 2000	Entry tax	2

Recommendations

Earmarking of tobacco taxes

The hypothecation or earmarking of tobacco tax revenues is recommended for spending on some specific activities. Earmarking can take different forms. For example, governments in several countries, including in one of China's largest cities, Chongquing, and several US states such as California, Massachusetts, Arizona and Oregon, earmark a portion of the tobacco taxes for tobacco-related education, counter-advertising and other tobacco control activities. In California, 20% of the allocation is earmarked for health education and media campaign, 50% for indigent health care, and 5% each for research and environment. Several Australian states and New Zealand have adopted the 'Vic-Health' model, in which tobacco tax revenues are used to fund sporting and artistic events previously funded by the tobacco industry.

In Nepal, a measure was adopted by Parliament to impose a 1 paisa 'health tax' per manufactured cigarette (domestically produced or imported). This health tax became effective in the fiscal year 1993–1994 and was subsequently increased to 2 paisa in 1994–1995. The revenue generated by this tax is earmarked for cancer control.[6] In 2001, the Government of Thailand passed the Health Promotion Foundation Act, which led to the setting-up of the Thai Health Promotion Foundation. Thai Health receives 2% of the total national tax revenue on alcohol and tobacco products.[3]

In India, Rs 2 per 1000 manufactured *beedis* are earmarked for the *Beedi* Workers' Welfare Fund, which was set up after the *Beedi* Workers' Welfare Fund Act, 1976 was passed. This Welfare Fund is administered by the Ministry of Labour and aims to provide housing, medical care, social security, educational and recreational facilities to workers employed in the *beedi* industry. A critique of this aspect is presented in the section on employment. In the Indian context, part of the earmarked funds can be used to help tobacco farmers and those employed in the manufacturing of tobacco products to move to other crops and industries. If tobacco taxes are used for things such as subsidizing tobacco cessation products, anti-tobacco media campaigns and other tobacco control measures, it would lead to larger reductions in tobacco consumption and a better public health outcome than would be achieved from tobacco tax increase alone. It will also partially take care of the resource problem that typically plagues funding for control of non-communicable diseases in developing countries.

Taxation of *beedis* and smokeless tobacco

As is clear from the discussion and evidence presented above, for various reasons, the tax rates on *beedis* and smokeless tobacco products are still very low. While recommending an increase in tax rates for *beedis* and chewing tobacco, it is also necessary to improve tax administration in this regard. A considerable proportion of smokeless tobacco and unbranded *beedis* escape the tax net.

As the discussion on fiscal measures adopted by the government so far (Section 6.8) shows, the tax net has fallen almost exclusively on the cigarette sector of the Indian tobacco industry (Box 7.1). The *beedi* and chewing tobacco sectors, which constitute larger consumption segments, have not been adequately taxed as they are mostly in the unorganized sector and are also the preferred products of the poor who consume tobacco. Such a policy, however, ignores the reality that the non-cigarette sectors will contribute to the largest burdens of death and disability attributable to tobacco in India. It also does not take into account the fact that price elasticity is higher among the poor and, therefore, the impact on consumption will be even greater if the products consumed by the poor have a price increase through the tax mechanism.

Box 7.1 Why does the cigarette industry fear taxes?

The best illustration of the effect of tax hike on tobacco consumption comes from the industry itself as shown by the following newspaper report.

'India's leading tobacco trade body has forecast that the volume of Indian cigarettes sold in this financial year (2001–2002) will fall by 9% due to higher taxes.'

'Cigarette (stick) consumption is expected to decline by about 9% in the current year to March 2002,' said Amit Sarkar, Director, Tobacco Institute of India. He blamed the sharp fall on a 15% across-the-board hike in excise duties on cigarettes in the budget of February 2001.

('Cigarette sale seen dipping 9% this year on duty hikes,' Economic Times, 6 September 2001)[7]

KEY MESSAGES

- A rational tax structure needs to be designed to provide a tax- and price-based disincentive for tobacco consumption in all forms, rather than merely transferring consumption from one tobacco segment to another.
- While taxes on cigarettes must be progressively increased, *beedis* and oral tobacco products should be taxed at sufficiently high rates.
- Several countries, e.g. New Zealand, Australia and the USA, have used an earmarked 'tobacco tax' to generate financial resources for funding health promotion programmes and specifically designed tobacco control programmes.
- India has used an earmarked *beedi* tax to provide several benefits to *beedi* workers. This concept needs to be extended to a dedicated tax or cess that will be utilized for resourcing tobacco control programmes.

7.2

Tobacco Product Regulation, Testing and Laboratory Strengthening

The adoption of the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) by the 56th World Health Assembly in May 2003 was a landmark accomplishment for public health. The regulation of tobacco products is an important component of a comprehensive tobacco control strategy and also features prominently in the FCTC. Several countries, including some developing nations, have already enacted domestic legislations that incorporate provisions for tobacco product regulation. The Indian Tobacco Control Legislation of 2003 calls for testing and disclosure of the tar and nicotine content of tobacco products.

Such a regulatory surge, however, will have to confront and overcome several challenges. A major barrier is the limited laboratory capacity for testing of tobacco products and their emissions. Increasing levels of activity in tobacco product regulation and the growing search for so-called 'harm reduction' products is sharply raising the demand for such laboratory services. These are inadequate even in developed countries and grossly deficient in developing countries.

While the tobacco industry has developed its own laboratory resources for tobacco product testing or hires the services of independent laboratories, government regulators in developing countries are now attempting to identify mechanisms by which they can acquire or upscale laboratory capacity to meet their regulatory needs. Laboratories are required for the purpose of regulation (pre-marketing evaluation and post-marketing surveillance) as well as for conducting research into new developments that are likely to influence the composition, characteristics and health effects of tobacco products.

Ideally, government regulators need to access laboratories that are not owned, operated or influenced by the tobacco industry. Such 'independent' laboratories may be (i) those operated by the government, or (ii) accredited independent private-sector laboratories, or (iii) research laboratories in academic institutions which could be accredited by the government. Each such laboratory must meet the inviolable criterion of freedom from the tobacco industry's influence.

Purpose of product regulation

As long as tobacco products continue to be legally permitted for sale, they need to be regulated with respect to their constituents and emissions. The purpose of regulation is to progressively reduce the levels of harmful chemicals and alter their physical characteristics that influence the delivery of these chemicals. Regulation should not, however, be construed to mean that any permitted level of a chemical is 'safe' or that the product is endorsed by the regulator. This is because there is no safety limit for such chemicals in terms of habitual human consumption. While upper limits are periodically set by the regulator for each chemical under regulation, it is merely a step in reducing the levels of harmful chemicals but not a guarantor of reduced harm of the product itself. The principles related to tobacco product regulation, as spelt out by the WHO's Scientific Advisory Committee on Tobacco Product Regulation (SACtob), are listed in Box 7.2.

The potential end-points of regulation are: reducing initiation or maintainance of addiction, reducing uptake, reducing harm to active smokers and other tobacco users, eliminating toxic non-tobacco additives, facilitating quitting and protecting non-smokers from second-hand

Box 7.2 Tobacco product regulation: WHO spells out why and how

Observations and principles

- Tobacco products have the capacity to cause addiction due to their nicotine content and other substances in the emissions.
- Manufacturing processes can further add to the toxicants and make nicotine more readily available for absorption into the body (for example, through the manipulation of pH, selection of aerosol particle size, addition of chemicals and changes in other physical parameters of the materials such as paper porosity and size of the cut tobacco material).
- Combustion and pyrolysis of tobacco material in tobacco products, such as cigarettes (both manufactured and hand-made), pipes, cigars and beedis, result in the formation of additional toxicants and can increase the addictive effects of nicotine.
- Regulation of cigarette ingredients and emissions is intended to support tobacco control efforts, prevent initiation and stimulate cessation.
- One of the purposes of this regulation of tobacco products is a progressive reduction in the level of toxic chemicals in tobacco product ingredients and emissions through periodic setting of standards. The upper limits set by the regulations do not in any way indicate an acceptable level of safety for any tobacco product and its emissions.
- The development of regulations on tobacco ingredients and emissions should aim to reduce health risks, although there is no expressed or implied measure of disease reduction.
- Smokeless tobacco products also produce emissions that are addictive and toxic.

Recommendations

- Regulations in terms of setting upper limits for ingredients and emission of toxicants need to be developed for all tobacco products whether they are intended for smoking or non-smoking methods of consumption. Variation in the ways in which tobacco products are used needs to be considered in establishing performance standards.
- For tobacco products intended to be smoked, the manufactured product needs to be differentiated from the product actually intended for consumption which is its emission ('smoke'); therefore, the critical focus of regulation must be on the emission.
- Ongoing surveillance and research must be instituted to assess the consequences of regulation on initiation, cessation and health effects to modify the regulatory process on a regular basis.
- With respect to nicotine, it remains uncertain at this time whether public health would be better served by increased or decreased levels of nicotine per unit (e.g. cigarette), and further study of this issue is required.
- No health claims can be permitted based on the level of ingredients or emissions, or whether the products meet regulatory standards for ingredients and emissions.

Source: WHO's Scientific Advisory Committee on Tobacco Product Regulation (SACtob), 2002

smoke. However, these expectations must be tempered by the fact that 'harm reduction' is as yet an illusory goal and may, sometimes, prove to be a decoy that diverts tobacco users away from tobacco cessation. It must also be recognized that, so far, most of the focus of product regulation has been on reducing the levels of cancer causing chemicals and more research is needed on the modifications that are required to have the potential for reducing the risk of other diseases such as cardiovascular disorders.

The position of SACtob on testing methods and 'low'-level products

The WHO established SACtob in 2000 for providing technical guidance on matters related to tobacco product regulation. One of the early recommendations of SACtob was on the limitations of currently available testing methods. SACtob was of the opinion that machine-tested emission yields do not the correspond to the actual levels of human consumption of toxic chemicals through inhaled smoke. While the International Standards Organization/United States Federal Trade Commission (ISO/FTC) tests are useful for providing information to regulators, they cannot provide meaningful information to consumers. Because of multiple mechanisms of 'compensation', the total human exposure to toxic chemicals is high even in the case of products labelled to be low in tar and nicotine content by machine testing (*see* Box

Box 7.3 Why is 'mild' not mild when it comes to tar and nicotine levels?

When nicotine levels are reduced in 'low tar–low nicotine' cigarettes, smokers tend to compensate in many ways to obtain their accustomed dose of 'nicotine fix'. Indeed, receptors in the throat respond even to puff by puff variations of nicotine dose. The smoker learns to inhale more deeply, smoke more cigarettes per day or push the filter back into the mouth to get unfiltered smoke. The health effects of smoking such cigarettes, therefore, ultimately are no different from those of smoking cigarettes with higher levels of tar and nicotine. Nevertheless, regulators must try to progressively lower the levels of as many harmful chemicals as possible, because of the potential for eliminating highly toxic chemicals (e.g. nitrosamines).

7.3). This is because consumers' beliefs and behaviours act as powerful modifiers in the pathway between cigarette yield and human consumption of toxic chemicals. An erroneous impression that cigarettes with 'lower' levels of tar and nicotine are 'safer' for human health leads to altered consumption patterns that may have adverse health effects on populations as well as individuals. Non-smokers, especially the youth, may be tempted to use tobacco products in the mistaken belief that they are safe. Smokers may abandon their efforts at cessation since the new product may act as a 'cessation decoy' through the false promise of safety. Smokers who have quit may return to the habit because they no longer fear the health consequences. Active smokers may even increase the volume of consumption of so-called 'safe' cigarettes, apart from using other compensatory mechanisms for obtaining their desired level of nicotine intake. All of these have adverse consequences on health, which are well documented in the following studies that provided the rationale for SACtob's recommendations.

In 2001, the US National Cancer Institute (NCI) completed its evaluation of the scientific basis for the relationship between FTC methods and the health effects of smoking, as well as the effects of marketing claims (e.g. 'reduced tar' and 'light') that are supported by the information derived from these methods. The NCI Monograph (Number 13, 2001) *Risks associated with smoking cigarettes with low machine-measured yields of tar and nicotine* presented the following five main conclusions:[8]

1. Epidemiological and other scientific evidence, including patterns of mortality from smoking-caused diseases, does not indicate a benefit to public health from changes in cigarette design and manufacturing over the past fifty years.
2. For spontaneous brand-switchers, there appears to be complete compensation for nicotine delivery, reflecting more intensive smoking of lower-yield cigarettes.
3. Widespread adoption of lower-yield cigarettes in the US has not prevented the sustained increase in the incidence of lung cancer among older smokers.
4. Many smokers switch to lower-yield cigarettes out of concern for their health, believing these cigarettes to be less risky or a step toward quitting. Advertising and marketing of lower-yield cigarettes may promote initiation and impede cessation—more important determinants of smoking-related diseases.
5. Measurements of tar and nicotine yields using the FTC method do not offer smokers meaningful information on the amount of tar and nicotine they will receive from a cigarette. The measurements also do not offer meaningful information on the relative amounts of tar and nicotine exposure likely to be received from smoking different brands of cigarettes.

Currently, there are two major issues of concern about the health claims based on the ISO/FTC methods: (i) machine measurements are not valid estimates of the exposure to smoke or nicotine received by smokers when they smoke different brands of cigarettes,[9,10] and (ii) many smokers currently believe that lower-yield or light cigarettes deliver less tar, produce lower rates of disease and are therefore 'safer'.[11–14] Because of these misconceptions, smokers believe those cigarettes marked as lower-yield or light and ultra-light are a reasonable intermediate step or alternative to cessation and may defer or avoid the one change in smoking behaviour proven to actually reduce their disease risk—cessation.

A study by the Health Education Authority in the UK[15] and several other studies have revealed that the tar and nicotine ratings, as displayed by the industry, are not clearly understood by consumers.[16,17] Due to the advertising and packaging methods adopted by the industry, smokers see these terms not as technical descriptors but as implying health benefits.[18–20] These advertising and marketing approaches have contributed to consumers' using lower-yield cigarettes in an attempt to reduce their health risks, or as a step towards or an alternative to smoking cessation.[21,22] A number

of reputed bodies have therefore recommended banning terms such as 'light', 'mild', etc.[23,24]

Based on the existing science, SACtob made the following conclusions and recommendations in 2002:

1. Tar, nicotine and carbon monoxide (CO) numerical ratings based upon current ISO/FTC methods, and presented on cigarette packages and in advertising as single numerical values are misleading and should not be displayed.
2. All misleading health and exposure claims should be banned.
3. The ban should apply to packaging, brand names, advertising and other promotional activities.
4. Banned terms should include light, ultra-light, mild and low tar, and may be extended to other misleading terms. The ban should include not only misleading terms and claims but also names, trademarks, imagery and other means of conveying the impression that the product provides a health benefit.

Obligations of WHO Member States under the FCTC (as relevant to tobacco product testing and regulation)

Three articles in the FCTC address regulation of tobacco products in terms of their permitted content, testing methods, industry disclosures to government, consumer information and public disclosure.[25]

Article 9: Regulation of the contents of tobacco products

Article 9 *requires testing of product contents and emissions, through recommended methods, as well as placing of regulatory limits on those contents and emissions.*

Article 10: Regulation of tobacco product disclosures

Article 10 *obligates each Party to ensure adequate disclosure, by the industry to the government and also, via government directed mechanisms, to the public.*

Article11: Packaging and labelling of tobacco products

Article 11 *requires the Parties to prevent packaging and labelling from being used as vehicles for false or misleading information or impressions and to provide the consumers information on relevant constituents and emissions, as defined by national authorities.*

It is worth noting that Article 11.2 does not specifically require the Parties to provide quantitative information on the levels of toxic chemicals in the constituents and emissions of tobacco products. Mere listing of some of these toxic chemicals would satisfy the requirements of Article 11.2. Statements such as 'this product contains nitrosamines which cause cancer and nicotine which is addictive' should suffice to meet this requirement.

National authorities may wish to enact legislation to mandate the disclosure of the levels of these chemicals (such as tar, nicotine, carbon monoxide [CO] and nitrosamines) but the FCTC itself does not impose such an obligation. Since SACtob has previously expressed its view that providing consumers with such quantitative information may lead to false perceptions of 'relative safety' of some products, the wording of Article 11.2 enables Member States to avoid such quantitative communications to consumers, if they choose to do so, while providing relevant information on the presence of toxic chemicals in the product and/or its emissions. The regulator would then ensure that the levels of the chemicals are no higher than the prescribed upper levels (to attempt limitation of harm) while avoiding public disclosure of those levels to the consumer (since there is no available proof of relative safety of that product).

Does the FCTC require countries to establish or strengthen 'independent' tobacco product testing laboratories?

Countries who become Parties to the FCTC could fulfil all of their obligations under Articles 9, 10 and 11 by any of the following mechanisms, for tobacco product testing, content regulation and disclosure:

- Use government-run laboratories;
- Use government-accredited 'independent' laboratories which provide commercial service to multiple users;
- Use government-recognized research laboratories located in academic institutions, if they undertake to perform periodic testing, as per the requirements of the National Regulatory Authority (NRA);
- Depend on information provided by the tobacco industry which may generate that information from laboratories it owns or contracts.

One or more of the above mechanisms could be utilized, provided that any laboratory which generates the required information follows the guidelines prescribed under Article 9 (to be provided by the Conference of Parties [COP] and further legislated by the concerned Member State).

Why should India use an independent laboratory?

Despite the fact that the FCTC does not impose a specific obligation on them to use independent testing laboratories for tobacco product regulation, developing countries such as India should invariably use such laboratories. Whether such laboratories are government operated or government accredited and situated within the country or accessible from other locations is not of much importance, provided they are clearly demonstrated to be free from the influence of the tobacco industry.

The most compelling reason for urging developing countries to use such independent laboratories is the dismal duplicitous record of the tobacco industry in consistently concealing relevant scientific information from the regulatory authorities as well as the consumers and public. This has become increasingly evident, through repeated revelations of such conduct in developed countries, during legislative or judicial review. It would be a folly to depend solely on data furnished by the tobacco industry, without having the ability to subject those data to independent verification.

The capacity for independent verification is integral to a competent regulatory process. Without that capacity, the regulator may mandate a testing procedure or prescribe limits for levels of toxic chemicals but would lack the assurance that these mandated measures are being strictly adhered to by an industry which has not been reputed for scrupulous conduct.

Which products need to be tested and for what physicochemical characteristics of the constituents and emissions?

The FCTC does not specify the chemicals and physical properties which are to be tested for, but does state that both contents and emissions of tobacco products need to be tested and regulated. The COP would be called upon to provide guidelines, which are to be developed in consultation with relevant international bodies (Article 11). It is generally expected that the WHO would undertake this task, with the help of expert committees such as SACtob. Ultimately it is the COP which will approve and recommend the testing guidelines to the Member States who are Parties to the FCTC. Each Party is expected to enact suitable national legislation and undertake measures to implement the testing and regulatory provisions in accordance with those guidelines. The language of Article 11 does not make it clear as to whether these guidelines are prescriptive or merely recommendatory, and to what extent each Party must undertake the testing or require tests to be performed by the industry. These issues would need to be addressed and resolved by the COP.

SACtob recommends the following list of analytes for testing purposes. This list is an initial minimum list for product content and emissions. It is not exhaustive and will require regular updating. These results will be reported per cigarette or per unit of any other smoked product.

Product content

- Nicotine/free nicotine (smokeless products)
- Ammonia/ammonium ion
- Metals (arsenic, cadmium, chromium, lead, mercury, nickel, selenium)
- Nitrosamines (N-nitrosonornicotine [NNN], 4-(N-nitrosomethylamino)-1-(3-pyridyl)-1-butanone [NNK], N-nitrosoanatabin [NAT], and N-nitrosoanabasin [NAB])
- Menthol

Emissions (mainstream and sidestream)

- Nicotine/free nicotine
- Tar
- CO
- Ratio of nicotine-free dry particulate matter to nicotine yield
- Polynuclear aromatic hydrocarbons: benzo[a]pyrene
- Volatiles: benzene, 1,3-butadiene, formaldehyde, acetaldehyde
- Nitrosamines: NNN, NNK, NAT, NAB
- Metals: arsenic, cadmium, chromium, lead, mercury, nickel, selenium
- Gas phase compounds: nitrogen oxide, hydrogen cyanide

This list is subject to addition and revision. It is considered optimal to expand this list to include other toxins in the profile. These additional compounds have been commonly called the Canadian list and include other semi-volatiles, additional polynuclear aromatic hydrocarbons, other volatiles, nitrosamines, etc.

A limitation of the laboratory methods available so far is that they have not been standardized for testing smokeless tobacco products. The abundance of a variety of smokeless tobacco products in India makes it essential that they be tested and regulated. Their constituents (ingredients and additives) would also need to be tested. Emissions are difficult to define, since there are no pyrolytic products.

Similarly, nicotine replacement products (NRPs) as well as other products vying to be recognized as 'harm reduction' products are also likely to require regulatory testing. Research laboratories should be encouraged to test such products before they enter the regulatory pathway.

What are the levels that must be set?

These would vary over time, with the goal of periodic lowering of the permitted upper level for each chemical. India has not yet set the upper levels for nicotine and tar, the two chemicals which need to be regulated under its law.

In 2001, the European Union decreed that from 1 January 2004, the yield of cigarettes released for free circulation, marketed or manufactured in Member States shall not be greater than:

- 10 mg per cigarette for tar;
- 1 mg per cigarette for nicotine;
- 10 mg per cigarette for CO.

As regards cigarettes to be exported, these rules will apply from 1 January 2007 onwards.

Brazil also enacted legislation during 1996–2001 to regulate tobacco products. The maximum limits for tar, nicotine and CO levels have been specified for multistage reduction. The notification of March 2001 provides an 18-month period by which a maximum of 10 mg, 1 mg and 10 mg, respectively, of tar, nicotine and CO levels would have to be attained for each cigarette. These levels are to be printed on cigarette packages, followed by a statement 'There aren't safe levels for consumption of these substances.' An NRA has been established and efforts are under way for strengthening independent laboratory capacity for regulatory testing. The revenue model for such a laboratory would involve a levy of user charges to be paid by tobacco manufacturers whose products are to be tested.

South Africa too has enacted legislation which mandates that tar and nicotine yields of cigarettes marketed in South Africa should not exceed 15 mg and 1.5 mg, respectively, with effect from 1 December 2001. These would need to be further downscaled to 12 mg and 1.2 mg per

cigarette, for tar and nicotine, respectively, from 1 June 2006. The availability of independent laboratories for conducting tobacco product testing needs to be ascertained.

Laboratory capacity: Research and testing

SACtob has, in a recent report (2004), identified the needs of establishing laboratory capacity for tobacco product testing. Laboratory capacity refers to the physical and human resources needed to conduct research, develop standards for product performance, develop product testing methods and conduct product testing. The Institute of Medicine report on tobacco harm reduction summarizes the scientific basis for testing the physical attributes of tobacco products that contribute to addiction, morbidity and premature mortality.[26] It is useful to distinguish two main types of laboratory capacity required to enable implementation of Articles 9–11 of the FCTC: research and testing.

Research: The main goals of research are to better understand the nature of tobacco products, how they work, their effects and how they might be modified to alter their effects (e.g. by new ingredients and designs). This can include molecular, *in vitro,* animal and human research, addressing topics such as the relationship between tobacco-specific nitrosamines (TSNAs) and lung cancer risk, the relationship between ingredients and addiction risk, and the relationship between particle size and lung retention of cigarette smoke toxicants. Research on human patterns of use and how they interact with product characteristics is also essential.

Testing: Repetitive examination and evaluation of products according to standardized methods to assess product performance is generally referred to as testing. This can occur at several stages. To help inform regulation, it can be useful to test products on a standardized protocol to characterize their delivery of substances such as for CO, nicotine and nitrosamines.

Laboratory research and testing must be coordinated. Although research, testing and development of performance standards may be distinguished for conceptual and organizational purposes, they are not mutually exclusive. Indeed, they must be interactive. Performance standards require testing of a broad range of product characteristics, conducting research to determine which toxicity-reducing goals are feasible and developing standardized testing protocols. This process will continually evolve and rapidly expand to address the challenges raised by existing products. As the number of new products in the pipeline increases, it is reasonable to assume that the need for developing performance standards will similarly expand. Research and testing needs include developing assays of physical characteristics, chemical composition, performance of products, *in vitro* and *in vivo* toxicology testing, and assessment of human-use patterns to determine the interactions between behaviour and product characteristics as well as actual human exposures.

Establishing laboratory capacity

The following principles are recommended for consideration in establishing laboratory capacity, whether through contracting mechanisms to existing laboratories or developing new laboratories:

1. The primary goal of establishing laboratory capacity is to provide a scientific basis for improving public health through tobacco product regulation.
2. Both research and testing laboratory capacity must be supported, developed, maintained and altered as conditions dictate. Research and testing operations have overlapping but distinct missions that must be recognized.
   - *Research laboratories:* A major characteristic of research endeavours is the presence of considerable flexibility to pursue the process of scientific discovery and analysis.
   - *Testing laboratories:* A major characteristic of testing operations is the capability of adhering to reliable, standardized, high-throughput protocols.

3. International coordination and facilitation of emerging laboratory capacity to implement certain provisions of the FCTC require at least two discrete expert considerations:
   - *Administrative issues* such as how to develop, fund and contract for laboratory capacity must be addressed. Mechanisms for funding may need to vary to meet differing needs on a country- or region-specific basis.
   - *Scientific issues* such as the prioritization and sequencing of potential targets of tobacco product design and ingredients must be addressed, and a mechanism for international sharing of knowledge and coordination implemented.
4. In view of the vast number of potential targets for study and testing, as well as the need for funding and developing standardized protocols, priorities and a timetable for their implementation in light of the FCTC must be developed to guide the sequencing. Priorities must be driven to the greatest extent possible by the existing scientific basis and public health needs, following review by appropriate scientific advisory groups, to provide oversight and guidance. WHO and its advisory committees shall identify the means whereby such priorities are established. In this regard, there are provisions in the FCTC that call on the Parties to cooperate in the scientific, technical and legal fields, and in the provision of related expertise.
5. The vital public health importance of product regulation necessitates the development of laboratory capacity as quickly as possible. However, the Study Group recognizes that the large magnitude of the need for research and testing capacity necessitates gradual development of laboratory capacity as funding is obtained, expertise is developed and laboratory facilities are established. The development pace should consider the critical importance of ensuring that high standards of integrity and quality of science are preserved.
6. Research and testing laboratories must develop mechanisms to share information, both nationally and internationally, and collaborate as necessary to ensure that the emerging scientific basis guides all. Mechanisms for sharing methods and results to ensure standardization of testing protocols are vital.
7. Transparency in operations is necessary to provide regulatory authorities and the public with confidence in the integrity of laboratory operations and findings.
8. The overall laboratory testing needs must be dictated largely by risk to humans as documented in human studies and animal models; therefore, laboratory capacity must enable physical, chemical and biological testing, together with the ability to modify and correct procedures following the findings by actual human-use assessments.
9. Surveillance of the health effects and changes in individual and population patterns of tobacco use, for example, as a function of changes in marketing messages are essential to guide the process and provide an objective basis for changing and improving the priorities for research and protocols for testing.
10. The laboratories must provide mechanisms for training new scientists and building the greatly expanded base of expertise and human capacity needed to fully implement the FCTC in the future.
11. Funding must be predictable, sustained and long term, with gradual growth potential provided as needed to enable laboratories to keep pace with emerging product issues, and the emergence of broader technical expertise that will enable laboratory expansion. Examples of such funding approaches include a surcharge on tobacco products as has been done in other areas of product regulation.
12. Regardless of the mechanism for funding, there should be assurance that the independence and integrity of research and testing operations are not compromised or inappropriately influenced.
13. Laboratory capacity addressed by these principles does not include the regulation

of non-tobacco nicotine products (smoking cessation medicines) but it is urged that regulation of tobacco products and medicines be mutually informed so that there are no inappropriate inconsistencies in regulation.

14. Existing independent laboratories serving the tobacco industry provide potential laboratory capacity, but if they are to be used to serve public health regulation, provisions must be put into place to assure independence of operations and credibility. Appropriate 'firewalls' must be developed in the drawing up of contracts for such laboratories.
15. The need to provide for flexible adaptation to altered or novel tobacco products is critical as the changing cigarettes and smokeless products have already led to the problem of inadequacy of the ISO/FTC protocol. Recent years have witnessed even more radical changes in the design of cigarettes and novel cigarettes as well as smokeless products, and further changes need to be anticipated. Therefore, it is critical that the research and testing capacity anticipate rapid evolution of products and have the capacity to adjust.
16. For countries with little or no existing laboratory capacity and insufficient resources for establishing them, such as in many developing countries, it is vital that networks be established to enable resource sharing and collaborative efforts to achieve the recommended laboratory capacity.
17. It is urged that all new tobacco products and modified existing products be subjected to pre-market review by regulatory authorities. Rigorous pre-market review is especially critical when claims such as 'harm reduction' are made or anticipated.
18. Pre-market review and product evaluation, which would be required by effective implementation of certain articles of the FCTC, are neither intended nor capable of assuring the safety of the products.

Development of laboratory capacity in India

India is now in the process of developing laboratory capacity for regulatory testing of tobacco products. In addition, it also needs to consider methods to develop research laboratories. At present, it has no dedicated laboratory of either kind which can perform the range of testing recommended by SACtob, though there are some laboratories capable of performing some tests (Table 7.5).

It is essential that India develop adequate laboratory capacity for both testing and research. The range of products to be tested must also include all major categories of tobacco products consumed in India: cigarettes, *beedis* and

Table 7.5 Tobacco testing facilities in India

Testing institutes/laboratories		Product	Constituents	Standard used
Government	Central Tobacco Research Institute (CTRI), Rajamundry (Ministry of Agriculture)	Cigarettes	Tar, nic and CO	ISO
		Leaf	Nic	BIS
			TSNA, sugar, chloride	Nil
Medical	Tata Memorial Hospital	Cigarettes	Tar and nic	Nil
Government	Bidi Tobacco Research Station (BTRS), Anand (Ministry of Agriculture)	*Beedis*	Tar, nic	BIS
			CO	Nil
		Leaf	Nic	BIS
Industry		Cigarettes	Tar, nic and CO	ISO
		Beedis	Tar and nic	–

Nic: nicotine; CO: carbon monoxide; TSNA; Tobacco-specific nitrosamines; BIS: Bureau of Indian Standards; ISO: International Standards Organization

chewed tobacco products such as *gutka*. The capacity must also extend to the testing of purported 'harm reduction' products (such as herbal *beedis*), which are burgeoning in the Indian market. Both independent testing laboratories (with government control or affiliation) and research laboratories (in academic/research institutions) need to be established for regulatory purposes.

Establishment of such laboratory capacity also requires the development of human resources (technical training) and financial resources (for equipment and operations). International collaboration with reputed laboratories (such as the tobacco testing laboratory at the Centers for Disease Control and Prevention, Atlanta, USA) will help in the development of technical capacity. For financing the laboratory in a sustainable manner, the Brazilian model of compulsory testing of tobacco products with levy of a user fee appears to be the best. If every brand of a tobacco product was to require compulsory testing every year for being permitted market operations, and if a fee was charged by the government for conducting such tests in a government-owned/accredited laboratory, the financial resources required for running a high-quality laboratory would be readily available on a sustainable basis.

Establishment of an NRA

For regulatory restraints on tobacco to be successful, it is essential that a strong NRA be established, with a clearly defined mandate, and adequate resources to monitor and discipline the tobacco industry. The NRA has to be linked to the testing as well as research laboratories on the one hand and to the administrative ministries on the other. The NRA would need to regulate on issues related to testing methods, upper limits of constituents and emissions of tobacco products, packaging and labelling as well as health claims. The authority of the NRA may also be extended to other areas covered under the Indian law. The NRA and the regulatory laboratories affiliated to it should be empowered to access all relevant information from the tobacco product manufacturers including details of raw material analysis, industrial processes, consumption by product, age of consumer and other factors which influence the population harm potentail.

7.2 TOBACCO PRODUCT REGULATION, TESTING AND LABORATORY STRENGTHENING

KEY MESSAGES

- The regulation of tobacco products aims to progressively reduce the levels of harmful chemicals and alter their physical characteristics.
- While a potential for 'harm production' exists theoretically, it is as yet unproven in public health terms.
- A Scientific Advisory Committee on Tobacco Product Regulation (SACtob), established by the WHO in 2002, provides technical guidance on matters related to tobacco product regulation—limitations of testing methods, setting up of upper limits for toxic ingredients and their emissions.
- India needs to develop laboratory capacity for regulatory testing of tobacco products (both smoking and chewed tobacco products).
- To monitor and discipline the tobacco industry, it is essential to develop a National Regulatory Authority with a clearly defined mandate and adequate resources.

7.3

Policy Interventions: Supply-Side Actions

There has been considerable emphasis on agricultural research to increase the efficiency of tobacco farming. The aims have included raising farmers' income and exports, reducing reliance on imported tobacco, and earning and conserving foreign exchange. An additional factor is the growth in demand for tobacco products in developing countries, as incomes and purchasing power have grown. Many developing countries are attempting to increase cigarette exports or substitute domestic products for imported cigarettes.

In certain low- and middle-income countries, including India, tobacco growing is important for several reasons, chiefly because of its labour intensity and ability to generate a dependable cash flow for small farmers. Seasonal labour is required for transplanting young tobacco plants from seed beds or greenhouses to fields, and for removing the tops (when the plants begin to flower) and suckers that grow from the stalk (to maximize growth and improve the quality of the leaves). Flue-cured tobacco is harvested by removing a few leaves at a time, a labour-intensive process. Machines are available for harvesting flue-cured tobacco and have been adopted in some areas, but there is no mechanization for Burley tobacco. Curing is also often done on the farm to ensure that the moisture, nicotine and sugar content are correct, which affect the quality and taste of tobacco. Mechanization has been difficult to achieve in tobacco farming due to the complexity of these tasks. Additionally, much tobacco is grown in hilly or mountainous areas which are unsuitable for mechanized equipment.[27] Many developing countries that grow tobacco have highly agrarian economies with large proportions of the total labour force involved in agriculture. In contrast to farming, manufacturing of tobacco products is a mechanized production process and generates few jobs.

For tobacco growers in India, it is a comparatively remunerative crop. It grows in soils of poor fertility and can better withstand variations in weather conditions compared with other crops. Problems of pests and disease are much less severe in tobacco than similar problems in alternative crops such as cotton, chillies and groundnut. Further, flue-cured Virginia (FCV) tobacco has a well-organized marketing system through the Tobacco Board of India (TBI). Tobacco has a short growing season and enables farmers to grow other crops such as green gram, black gram and certain varieties of rice outside the tobacco-growing season. Furthermore, the lure of tobacco as a cash crop in countries such as India is because tobacco leaf can be grown on either large or small farms, the sale of tobacco leaf potentially generates important public revenue as well as cash flow for farmers and rural communities, and the prices received by tobacco growers are relatively stable over time.

The tobacco epidemic may be curbed from either the supply or the demand side. The supply side pertains mainly to crop substitution, trade restrictions, controlling smuggling and even banning of the product. Demand-reduction measures include increased taxes and prices, stricter and more prominent health warnings, bans on promotion of tobacco products, curbs on smoking in public places and educating the community on tobacco-related risks.

Tobacco control policies and the economy

The tobacco industry in India has been arguing that the Indian economy is dependent on the industry for employment and income. The argument usually put forward is that measures that threaten tobacco sales bring serious political risks because of damage to the economy. Studies

Box 7.4 Should tobacco be banned?

Some public health advocates have called for tobacco to be prohibited, arguing that the problem is not in its consumption but its production. Advocates of tobacco prohibition point to the marked reduction in alcohol-related diseases when alcohol supply was restricted earlier in the twentieth century. When alcohol supplies were restricted in Paris, France during World War II, its consumption fell by 80% per capita. Deaths from liver disease in men were halved within 1 year and fell by four-fifths after 5 years. After the War ended and alcohol became freely available, mortality from liver disease returned to pre-War levels.[28]

However, banning of tobacco production is currently not a feasible option because: (i) as long as the ban is not global, action by individual nations will not end the tobacco trade or consumption; (ii) tobacco has been legally produced and sold for a long time and presently offers employment to many, hence an abrupt ban would be difficult to enforce; and (iii) mechanisms to provide economically viable alternate livelihoods are not in place. However, this should not preclude policy-makers from pro-actively encouraging a shift from tobacco to other alternatives, in both farming and industry.

carried out worldwide that have estimated the impact of tobacco control policies on employment, tax revenue and incomes are reviewed below.

Studies commissioned by the industry

Most studies sponsored by the industry suggest that tobacco control policies would have a detrimental impact on the income and employment in high-income countries.[29–38] Generally, these studies estimate gross employment and do not consider that the decline of one economic activity (tobacco) would be replaced by alternative spending and economic activity that would generate alternative employment.

The tobacco industry also argues that it is (i) a major foreign exchange earner; (ii) an important contributor to the economies of a number of Indian states, particularly through providing valuable employment opportunities in regional and rural areas; (iii) a substantial contributor to government revenues which will continue to be important for sustaining public sector activities in urban, regional and rural locations.[39]

Studies not sponsored by the industry

Other studies estimate the net impact on economic activity from eliminating or reducing expenditure on tobacco, and make certain assumptions about how the alternative expenditure will affect the economy.

The broad conclusions of most such studies not sponsored by the industry show that job losses would occur in the sectors that are immediately associated with tobacco manufacturing and farming, and the sectors involved in retail, wholesale and distribution of tobacco products. In some cases, government jobs would also be lost. However, in most studies, these losses are outweighed by increases in employment in all other industries and sectors. The increase in jobs is most marked in the service industries, which are labour-intensive. Jobs lost in retailing tobacco are likely to be replaced by jobs retailing other products that people purchase with the money formerly spent on tobacco.

Some studies have, however, tested alternative expenditure patterns following evidence that cessation of smoking by consumers leads to new spending patterns.[40,41] Studies in the United Kingdom and South Africa, examining the expenditure of people who had recently quit smoking, showed that they made increased use of labour-intensive services such as recreation, education and communications.[42] Even where it is assumed that a portion of the re-allocated resources would go to saving rather than spending, the studies show that there could still be employment gains, because of incremental investment demand, assuming people use their savings to acquire financial assets other than cash.[43] The results also show that tobacco-producing regions or countries, for example, the south-eastern part of the United States, Zimbabwe and Canada, would have suffered job losses.[44–46] However, in the United States, with every non-tobacco producing region enjoying a net gain in jobs, all non-tobacco regions would

collectively have gained enough employment to offset the losses.[44]

Finally, certain assumptions are made by some of the researchers as to how governments may react to a possible loss in revenue from a fall in consumption in the long run. If the fall in consumption is brought about not by excise taxes, but by other regulatory actions such as an advertising ban, then consumers would have additional money to spend on goods and services besides cigarettes. Alternatively, if the fall in consumption is brought about by tax increases, then new jobs will also be created, as long as the government spends the additional tax revenues. Even in the unlikely case of governments using the entire extra income for deficit reduction, reduced interest rates would result in increased employment. Taken together, the evidence suggests that the economy, at a macro level, can respond to the decline in cigarette consumption by generating at least as many jobs in other industries as were lost in tobacco growing or manufacturing.[47]

A review conducted by the Centre for Multi-disciplinary Development Research (CMDR), Dharwad provides data on tobacco employment, export earnings and tax revenues. It explains some of the negative aspects of the tobacco industry. Tobacco industry workers in India earn low wages, may face gender discrimination and the working conditions can be detrimental to health. The article calls for the government to give support to workers in the tobacco industry to help them in transition to other sectors.[48]

A major study on the economics of tobacco control[28] published by the World Bank emphasized that tobacco control was essential for protecting health and economic development, and also concluded that the negative effects of tobacco control on employment were greatly overstated. It argued that the decline in the prevalence of tobacco control would be gradual and take place over several decades. Further, the money once spent on tobacco would be spent on other goods and services, thereby generating more jobs in non-tobacco sectors. The report, however, recognized several reasons why governments would want to provide assistance to poor farmers, to meet the transition costs.

Crop substitution and diversification

There has been much discussion of tobacco-farm 'diversification' or 'crop substitution', which entails switching from tobacco to other crops.[49–51] Large-scale efforts to encourage tobacco farmers to diversify and substitute alternative crops have been made in only a few countries. In the United States, farmers have expended considerable effort in searching for alternatives to tobacco, motivated in part by the US market's uncertain prospects. A recent survey of US tobacco farmers showed that 70% had attempted supplemental enterprises in the previous 5 years.[52] Efforts, however, have been scattered, and farmers have not been offered financial incentives to switch crops. There have been attempts to grow familiar crops such as broccoli, as well as more exotic crops such as ginseng. Several alternative crop programmes could succeed. Labour-intensive specialty crops and value-added activities are viewed as the most promising alternatives, primarily fruit, vegetables, tree crops and flowers.

For developing countries too, a number of alternative crops have been identified, which include cassava in Brazil, sugarcane in Kenya, and chillies, soyabeans, cotton and mustard in India (Box 7.5). Yach reported that, worldwide, more than 50 alternative crops and land uses for tobacco have been identified, but acknowledged that several obstacles prevented implementation.[53]

One important barrier for farmers contemplating a switch of crop may be a lack of credit with which to purchase new seeds or other inputs. In many countries, tobacco growers obtain production loans from processors or marketing boards which are repaid when the tobacco crop is sold. Strong logistical support offered by the tobacco industry with technical advice and

Box 7.5 Crops suggested by the Indian Council of Agricultural Research (ICAR) as alternatives for tobacco

Irrigated areas: Oil palm, sugarcane, groundnut, cotton, chillies, maize, onion, cucumber, vegetables, black gram, green gram, mustard, ragi, castor–groundnut, cotton–groundnut, pigeon pea–groundnut, paddy–mustard, potato, ginger–wheat, tomato, lady finger, cabbage, cauliflower, garlic, tomato, brinjal and pulses, red gram and turmeric.

Unirrigated areas: Sorghum, mustard, green gram, coriander, cotton, Bengal gram, black gram, green gram, soyabean, red gram, sunflower, safflower, groundnut, maize, bajra and castor.

packages, which include seeds, fertilizers and pesticides, come with the production loans. In some cases, the loans are so large that small farmers may be unable to repay them.[54] Another problem is an apparent lack of markets for alternatives to tobacco. Other crops often suffer from post-harvest delivery, whereas tobacco's storability can reduce year-to-year fluctuations in prices.

Some specialty crops are able to provide competitive returns for a few farms, but widespread adoption would drive prices down, thus eliminating any profitability advantage. Careful market analysis must also be conducted before recommending substitutes for tobacco.[55] The analysis must consider the size of the potential market (domestically and overseas), elasticity of demand (sensitivity of price changes to quantity), inter-regional and international competition, and the relative advantage of the tobacco-growing region (in terms of production costs, soils and access to markets) compared with competing regions.

Diversification should be viewed as a broad process, with crop substitution being only one component of the whole. Analyses suggest that diversification programmes have a greater chance of success if they are designed in terms of broad economic development in tobacco-growing areas to provide non-farm employment opportunities, sources of tax revenue and foreign exchange. A non-farm job may be the best alternative to tobacco growing in many places.[28] Rural economic development, including value-added enterprises, should be encouraged to provide additional job opportunities. This may require investment in transportation and other infrastructure, education and job training, and access to credit for small businesses.[35] Farmers are likely to need compensation and assistance to make the transition to other crops, retirement or non-farm employment. Informational data-bases that include soil characteristics, topography, rainfall patterns, field size configurations, machinery complements and any requirement for managerial expertise would help farmers evaluate the prospects for the successful adoption of alternatives. Geographical information systems could also be used to identify suitable areas for various alternatives.[56]

Since tobacco provides much higher returns than alternative crops, farmers would require some financial inducement to switch crops. However, such inducements would be costly and are unlikely to be effective in reducing demand. A few governments have offered, or have proposed offering, inducements to farmers to leave tobacco farming, but none have clearly succeeded in significantly cutting tobacco production. Canada's Tobacco Diversification Plan provided incentives to stop growing tobacco and develop alternatives to assist the orderly downsizing of the Canadian tobacco industry in the 1980s.[57] Significant numbers of farmers ceased production through this programme, but many participants acknowledged that they would have quit tobacco farming without it. Australia eliminated production subsidies, domestic content rules for cigarette manufactures and lowered tariffs, while at the same time offering a buy-out of tobacco quotas.[58] As a result of the Australian deregulation and buy-out, many growers left the tobacco sector, but they tended to be less efficient producers of low-grade leaf; those remaining tended to expand the scale of their operations to increase efficiency. In the United States, officials drafting comprehensive tobacco legislation in 1997 and 1998 discussed a buy-out quota of US$ 8 per pound of tobacco payments to tenant farmers, as well as job

training, education and rural development grants.

If a buy-out or other schemes were successful in reducing production in a particular country or region, there will be little effect on the world supply of tobacco as it is well known that world production is already shifting to low-income countries. Developed countries have restricted their production (albeit for the welfare of the producers rather than tobacco-control objectives) over the past several decades. At the same time, developing countries have rapidly expanded production to fill the void and meet world demand, thus the world production has continued to grow. It is likely that new buy-out policies would merely create huge profits for other tobacco suppliers, and a rapid increase in 'replacement' production.

The Indian scenario: Returns from tobacco versus other crops

Tobacco developed as a cash crop because of its export value and domestic demand. As a result, tobacco farmers received better prices compared to other farmers, despite the high costs involved in tobacco cultivation, curing and grading.

A number of studies were initiated in India to examine the comparative cost of cultivation, i.e. tobacco versus other crops. The studies conducted by agricultural and other research institutes, and Central Tobacco Research Institute (CTRI) are important; the results of some of these studies are discussed here.

A 3-year experiment (1992–1995) on *beedi* tobacco carried out by the Nippani Agriculture Research Centre (in Belgaum district in Karnataka) revealed that out of nine cropping systems, the combination of groundnut and *rabi jowar* yielded the highest gross income of Rs 39,384/hectare. Tobacco and groundnut yielded Rs 31,696/hectare, and cultivation of tobacco as the sole crop yielded only Rs 13,680/hectare.[59] A study by Satyapriya and Govindaraju found that though the net income per hectare from *beedi* and FCV tobacco was more than that from other

Table 7.6 Comparison of returns from *beedi* tobacco cultivation versus those from other crops[61]

Crops	Net return per acre (Rs)	Net return per rupee of investment
Jowar	490.24	0.19
Tobacco	3,498.76	0.57
Sugarcane	8,649.35	0.87
Cotton	649.25	0.11
Soyabean	1,289.07	0.43
Groundnut	125.23	0.05

crops, the net income per rupee of investment was higher from groundnut than from *beedi* tobacco, and higher from *jowar*, rice and horse gram than from FCV tobacco.[60] However, they concluded that, given the existing level of technology, the possibility of an alternative crop to tobacco, purely on economic grounds, does not exist.

A study on *beedi* tobacco in Karnataka revealed that sugarcane in irrigated areas and soyabean and *jowar* in unirrigated areas can be alternatives to tobacco, as the results in Table 7.6 indicate.[61] For farmers growing tobacco on a large scale, the net return per rupee of investment in the cultivation of *jowar* was higher (1.84) than the return from tobacco (1.48). This indicates that these farmers need not depend only on tobacco for economic returns.

In the state of Gujarat, the net return on cotton was Rs 9560/hectare compared to Rs 3367/hectare for tobacco.[62] Moreover, single- or mono-crop replacement of tobacco is not profitable, and there is support for crop sequences and inter-cropping.[63] For example, in Gujarat, *bajra* can be grown as an alternative to tobacco in the summer months. In 2000, in the state of Andhra Pradesh, tobacco cultivators were forced to consider alternate crops in the wake of severe drought. Here pulses, gingelly, maize and soya-bean were considered alternative *kharif* crops. These crops were considerably cheaper to cultivate.[64]

It is believed that FCV tobacco grown in traditionally cultivated areas is more profitable than any other conventional farm activity. The only factor that would jeopardize the economics

Table 7.7 Economics of tobacco and alternative crops (based on studies carried out by the Central Tobacco Research Institute, 1991–1996)

Region	Crop	Net returns (Rs/hectare)	C:B ratio
Black cotton soil of Andhra Pradesh	Tobacco	17,694	1:1.80
	Chilly	10,647	1:2.08
	Groundnut + red gram	22,948	1:3.07
	Maize + Bengal gram	16,366	1:2.86
Southern light soils of Andhra Pradesh	Tobacco	8375	1:1.52
	Red gram	4700	1:2.09
Tamil Nadu	Tobacco	8877	1:1.84
	Groundnut	6052	1:2.63
Bihar	Tobacco	1047	1:1.05
	Maize + potato	57,160	1:3.67
	Tobacco + garlic	22,831	1:1.87
Karnataka	Tobacco	12,000	1:1.50
	Groundnut	4000	1:1.80
	Ragi	1250	1:2.03

C:B Cost–benefit ratio

Source: Ministry of Health and Family Welfare, 2001

of this crop is said to be overproduction.[65] However, studies carried out by the CTRI during the period 1991–1996 indicate the feasibility of alternate crops for tobacco (Table 7.7). In addition to alternatives such as chilly, groundnut, red gram and *ragi*, inter-cropping with suitable crops seems to be a better option to the replacement of tobacco so that even if one crop fails, farmers can sustain themselves from the other crop.

The report on the region-wise cost of cultivation of crops for the year 1994–1995 brought out by the Farm Management Division of the Karnataka State Department of Agriculture (KSDA) also yielded similar figures. Though the return per rupee of investment for FCV tobacco over variable cost was more than a rupee, it was less than a rupee over total cost. This was not the case with *beedi* tobacco, wherein the net return per rupee of investment over variable cost and total cost was Rs 2.78 and Rs 1.97, respectively.[66]

Field experiments were conducted in inter-cropping systems at the CTRI Research Station, Pusa, Bihar from 1990 to 1997.[67] A tobacco plus garlic inter-cropping system recorded the maximum total yield. The cost–benefit ratio or return per unit of investment was estimated at 1:3.2. Such inter-cropping systems may be the first step of gradually moving away from tobacco.

From among the non-tobacco mixed cropping systems, maize plus potato was estimated to fetch the highest net return. Considering the aversion to the calculated risk associated with alternative cropping systems, garlic and potato were considered suitable because both of them remain underground, escaping the risk of loss due to hailstorms, pests, etc. which normally affect tobacco, completely neutralizing the investments made by tobacco farmers.

On similar lines, the CMDR examined this issue with the help of household-level data in one of the tobacco-growing regions of south India through an ongoing action research project sponsored by the International Development Research Centre (IDRC), Canada, called the 'Economics of shifting from tobacco cultivation'.[48]

The study revealed that mixed cropping is much more profitable than exclusive tobacco cropping. The *jowar* (*kharif*) and tobacco (*rabi*) combination fetches larger net returns per acre than other mixed cropping practices. It is also apparent that the per acre cost of cultivation in the case of mixed cropping of tobacco and *jowar* is very low. It is worth noting that the net return per acre is positive and fairly high when tobacco is cultivated along with *jowar* and groundnut (*rabi*). Farmers may be persuaded to initially take to mixed

cropping with tobacco and then move to other crops or other economic activities in place of tobacco cultivation. A package of mixed cropping, shift to other crops with suitable crop insurance facilities, adequate farm inputs for the alternative crops, adequate marketing facilities, etc. would be necessary to ensure the success of the policy of gradual shift from tobacco.

Jaisani found that in parts of Gujarat and Karnataka where tobacco is grown extensively, the soil and weather conditions also supported the cultivation of cotton, chillies and grain crops. He reviewed the net returns of tobacco in comparison with other crops grown in the state of Gujarat and found the net returns for castor and cotton to be considerably higher than those for tobacco.[68] Another study concluded that *Plantago (isabgul)*, an indigenous crop which grows well in mild temperatures and is used as a natural laxative, is a viable alternative to tobacco and has a good export potential.[62]

The Agricultural Research Centre in Nipani, Karnataka investigated eight alternative cropping systems between 1992 and 1994, and found that mono-crops of chilly and cotton produced higher returns than tobacco. In the case of combination crops (soyabean, *ragi*, *sorghum* and groundnut), the returns were higher than tobacco mono-crops. This was further supported by Nagarajan *et al.* who found that mono-crops were not as profitable as tobacco across a variety of agro-climatic zones.[63] In addition, CMDR, Karnataka also found that mixed cropping yields higher profits than if tobacco was cultivated exclusively. *Jowar* sown between June and September, and tobacco sown in the *rabi* season yield larger returns per acre than other mixed crops. The conclusion emanating from this study is that, in the interim, farmers can be persuaded to sow tobacco with other crops (e.g. *jowar*) to maintain profits, and gradually phase out tobacco cultivation.

Economic effects of crop substitution and diversification

It is sometimes argued that tobacco and tobacco products are major sources of indirect tax revenue for the government and agricultural diversification away from tobacco may possibly reduce this revenue. According to Panchmukhi *et al.* , the net effects would still be favourable to the government because government expenditure on health and medical care, necessitated by tobacco health hazards, would be considerably reduced.[61] Agricultural diversification away from tobacco is alleged to cause loss of employment opportunities within the farm sector since tobacco cultivation is supposed to require a large number of workers throughout. While it is true that tobacco cultivation is labour-intensive, it should also be recognized that shifting from tobacco would not cause much dislocation in the employment situation of the country. In India, only about 5.6% of the total 107.14 million cultivators are engaged in tobacco farming. Since a large number of farmers who have already shifted from tobacco cultivation do not seem to have been unfavourably affected by the transition, the adverse employment effect of shifting from tobacco is unduly exaggerated. Favourable effects in terms of avoidance of ill health, promotion of schooling of previously employed children, etc. would obviously outweigh the alleged adverse employment effects of shifting. The health and social benefits of such diversification should always be considered while evaluating the economic effects of shifting from tobacco to other crops.

What is needed to promote crop diversification in India?

In identifying alternative crops, an in-depth market analysis is required. This should include considerations of the size of the potential market (both domestic and international), elasticity of demand and supply, inter-regional and international competition, and the relative advantages of the tobacco-growing region (i.e. production, costs, soils and access to markets) compared with competing regions.[69] An attempt to persuade tobacco cultivators to switch to alternate crops will only succeed if the alternatives are equally or more profitable. The provision of credit to farmers to invest in seeds,

fertilizers, pesticides, and other supplies and equipment, and crop insurance should also be factored into the analysis. Currently, the rates of procurement from farmers are low and are set by the trading agents, who are also responsible for advancing credit to the farmers. Education and awareness programmes aimed specifically at farmers are required, which detail the costs of tobacco cultivation, the health hazards associated with tobacco and the feasibility of shifting to alternate crops. An investigation of the environmental impact of tobacco curing is required in terms of air pollution and forest depletion while estimating the costs of tobacco cultivation *vis-à-vis* other crops. Tobacco is a labour-intensive crop which often requires the time and effort of an entire household, including children. Alternative crops which do not require children foregoing school should be given priority. The government should provide assistance during transition, especially to poorer farmers, which includes rural training, broader off-farm employment opportunities and assistance with crop diversification.[69] Further, tobacco diversification needs to be considered within a broader developmental framework and the feasibility of non-farming jobs should also be considered, which might entail infrastructural investment.

International trade and tobacco control

Tobacco promotion and trade has become a major global public health threat. While tobacco consumption fell in many high-income countries in the 1980s and 1990s, it rose in developing countries. This was largely due to the inroads made by transnational tobacco companies (TTCs) into the markets of low- and middle-income nations since the mid-1990s.[28] TTCs have been strong proponents of tariff reduction and open markets to enable them to compete with domestically manufactured tobacco products in the high growth markets of Latin America, eastern Europe and Asia. Eliminating or reducing tariffs and other barriers to imported tobacco products enables foreign companies to compete more fairly with locally producing companies. The increase in competition associated with opening the market to foreign producers may also lead to more intensive promotion and marketing of tobacco products.

Empirical evidence confirms that openness of trade leads to increased tobacco consumption.[70] Aggressive marketing efforts undertaken by TTCs in the wake of bilateral agreements negotiated between the USA and several Asian countries in the 1980s stimulated the demand for tobacco in an initial period. The evidence also indicates that the effect of TTC marketing on increasing tobacco consumption is greater in poorer and more vulnerable countries.[70,71]

Trade barriers as tobacco control policies

Higher tariffs on tobacco may, among other factors (such as taxes), contribute to a rise in consumer price, which leads to lower levels of consumption and lower prevalence of smoking among the youth.[71] Raising tariffs, however, runs counter to the general goal of trade liberalization, which is to reduce or eliminate tariffs and non-tariff barriers to international trade. Commitments to reduce tariffs on tobacco products are now part of existing multilateral, regional and bilateral trade agreements. However, one of the key objectives of the World Trade Organization (WTO) agreements—reduce tariffs and eliminate non-tariff barriers to trade—does not prevent governments from applying non-discriminatory internal taxes and certain other measures which they may consider appropriate to safeguard public health.

WTO agreements and tobacco policies

Depending on how governments choose to manage the trade in tobacco and tobacco products, a number of WTO rules could come into play. The US–Thai tobacco case (Box 7.6) illustrated the relevance of the GATT, as it affected taxes, prohibitions and human health-related exceptions to the GATT rules. Other WTO agreements that may be applicable, but which have not yet been involved in the tobacco-related

Box 7.6 Impact of international trade policy on tobacco imports: The case study of Thailand

The health and tobacco trade debate dates back to the late 1980s. At that time, the US government began a series of actions to get Thailand and some other Asian countries to open their markets to US tobacco products. In each case, tobacco manufacture and sales were controlled by state monopolies. The US government succeeded in negotiating bilateral agreements which removed excise taxes and distribution practices that discriminated against US tobacco products—except in Thailand.[72]

Thailand argued that its import restrictions were part of a comprehensive policy to control tobacco use. In response, the US filed a complaint with the General Agreement on Trade and Tariffs (GATT), the predecessor to the WTO, against Thailand. As a result of this case, Thailand had to lift its import ban and reduce the excise duty on tobacco because these could not be justified on health grounds so long as the sale of domestic cigarettes was allowed. However, Thailand was allowed to continue with its advertising ban since this applied to all products without discrimination. In line with the GATT ruling, the Thai government lifted the import ban in 1990 and legal export of cigarettes commenced to Thailand in 1991. Thailand was, of course, still free to charge duty on imports. It was also free to set its excise duty at any level so long as it did not discriminate between local and imported products.

The opening of the domestic market to foreign producers initially led to an increase in cigarette consumption, but it also served to strengthen national tobacco control efforts. After the GATT ruling, support grew for national tobacco control measures and in 1992, Thai Parliament passed two important tobacco control acts designed to restrict tobacco sales. The measures included increased sales taxes, smoking bans in public buildings, disclosure of ingredients and requirements for prominent health warnings on cigarette packages. As a result, smoking prevalence declined in the mid- and late 1990s.

controversy among WTO members, include:

1. The Technical Barriers to Trade (TBT) Agreement in relation to product requirements such as packaging and labelling;
2. The Agreement on Agriculture in relation to government support for tobacco production;
3. The General Agreement on Trade in Services (GATS) in relation to restrictions on cigarette advertising; and
4. The agreement on the Trade-related Aspects of Intellectual Property Rights (TRIPS) in relation to trademark protection and disclosure of product information considered by producers to be confidential.

7.3 POLICY INTERVENTIONS: SUPPLY-SIDE ACTIONS

KEY MESSAGES

- Supply-side actions are complementary to demand-side measures to control tobacco consumption in India.
- Supply-side actions pertain mainly to crop substitution, trade restrictions, controlling smuggling and even banning of the product.
- It is feasible and viable for tobacco cultivators to switch over to alternative crops such as cotton, chillies, *isabgul* (*Plantago*), cotton, maize, soyabean, sugarcane and potato.
- An in-depth market analysis is required to identify alternative crops. This should include considerations of the size of the potential market—both domestic and international—elasticity of demand and supply, inter-regional and international competition, and the relative advantages of the tobacco-growing region (i.e. production, costs, soils and access to markets) compared with competing regions.
- The government should provide assistance during transition, especially to poorer farmers, which include rural training, broader off-farm employment opportunities and assistance with crop diversification.
- Tobacco diversification needs to be considered within a broader developmental framework.
- The feasibility of non-farming jobs should also be considered, which might entail infrastructural investment.

7.4

Policy Interventions: A Comprehensive Ban on Advertising

'Cigarettes are the most marketed products in the world. There is no reliable estimate of global cigarette marketing expenditures, but roughly it is estimated to be in tens of billions of US dollars a year. Cigarette marketing is bolder and more aggressive in developing countries than in developed countries. Tobacco advertising is common in television, radio, sports, arts, music, fashion and street events, adventure tours, contests, give-aways and the internet. There are also hidden advertisements such as showing of cigarette smoking scenes and other tobacco products in films, sponsorship of universities, good-will donations to community events, and advertising of other goods and products bearing the brand name of tobacco products.'[73]

It has long been recognized that reducing or eliminating advertising of tobacco products is important for tobacco control. Many countries have taken steps to reduce tobacco advertising, including prohibition of advertising at the point of sale.[74] Several countries, including India, have banned the advertising of tobacco products to a variable extent. Recognizing the impact of tobacco advertisements and promotional activities, the Framework Convention on Tobacco Control (FCTC) (Article 13) has called upon countries to undertake a comprehensive ban of all tobacco advertising, promotion and sponsorship to reduce the consumption of tobacco products.[75] The Indian Act for tobacco control (Cigarettes and Other Tobacco Products Act, 2003) banned all forms of advertising of tobacco products—except at the point of sale.[76]

Tobacco advertising and promotion

In places where advertising is permitted, the largest single expenditure of tobacco companies is devoted to advertising and promotion, which exceeds the amount spent on purchasing tobacco leaf.[77] A majority of studies have shown that tobacco advertising leads to an increase in consumption. Tobacco advertising also has a powerful effect on young people. Tobacco promotion activities are causally related to the onset of smoking in adolescents, and exposure to cigarette advertising is predictive of smoking among adolescents. There is an increase in the prevalence of use of brands, as well as in the prevalence of smoking altogether, after the introduction of brand advertisements that appeal to young people.[78]

The impact of tobacco advertising on consumption

Econometric research evidence

Most econometric studies have found that increased expenditure on tobacco advertising increases the demand for cigarettes, while banning advertising leads to a reduction in tobacco consumption. A meta-analysis of such studies found that tobacco advertising significantly increased tobacco sales.[79]

Research evidence within a country before and after a ban on advertisements

Several studies have yielded convincing data that a complete ban on advertising makes an important contribution towards reducing the prevalence of smoking.[79] Some of them are summarized in Table 7.8.

International comparison of trends in tobacco consumption and anti-tobacco measures

A study by the New Zealand government, which examined the trends in consumption and

Table 7.8 Study results within a country before and after a ban on advertising[79]

Country, year	Description of anti-tobacco measures	Effect
Norway, 1975	Complete ban on advertising and sponsoring coupled with health warnings, public information and age limits on sales	Long-term reduction in the prevalence of smoking by 9%
Finland, 1977	Complete ban on advertising, no smoking in public buildings, age limit on sales, strong public information campaigns	Reduction of cigarette consumption by 6.7%
Canada, 1989	Complete ban on advertising and sponsoring, with higher tobacco prices	Corrected for price increases, a long-term reduction of 4% on the prevalence of smoking
New Zealand, 1990	Ban on advertising and sponsoring, higher tobacco prices	Reduction in tobacco sales by 7.5%, of which 5.5% can be attributed to the ban on advertisements
France, 1991	Complete ban on advertising, limiting smoking in public buildings, removal of tobacco from the consumer price index	Reduction of smoking prevalence by 7% in 1991–1993

advertising of tobacco in 33 countries during 1970–1986, demonstrated that the higher the degree of governmental control on tobacco advertising and sponsorship, the larger the annual reduction of tobacco consumption. A cross-sectional time series analysis in 22 Organization for Economic Cooperation and Development (OECD) countries, during 1960–1986, concluded that increasingly strict regulation of advertising causes corresponding reduction in tobacco consumption.[79]

When countries ban tobacco advertising in one medium, such as television, the industry can substitute advertising in other media with little or no effect on overall marketing expenditure. If the most comprehensive restrictions were in place, tobacco consumption would fall by more than 6% in high-income countries. Modelling based on these estimates suggests that the European Union's ban on advertising could reduce cigarette consumption within the European Union by nearly 7%.[80] Another study in 102 countries compared consumption trends over time in countries with relatively complete bans on advertising and promotion, and those with no such bans. In the countries with nearly complete bans, the downward trend in consumption was much steeper (Fig. 7.4). In Fig. 7.4, it can be noted that the group with comprehensive bans starts at a higher consumption level than the non-ban group but at the end of the study period, has a lower consumption level. This change was due to the higher negative growth in the countries where the ban was operable.[80,81]

The effect of tobacco advertising on young people

Advertising and promotion of tobacco products attract children's attention, and they remember its messages. There is also growing evidence that

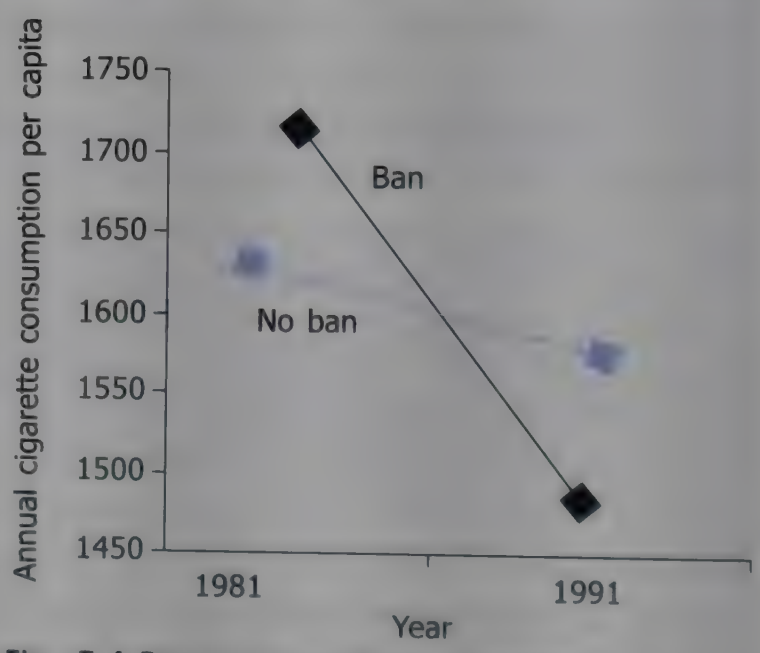


Fig. 7.4 Trends in weighted cigarette consumption per capita in countries with a comprehensive ban compared with countries with no ban[80,81]

Source: Saffer, Henry. The control of tobacco advertising and promotion. Background paper, cited by Jha and Chaloupka

the industry is directing increasing shares of its advertising and promotion activity toward markets where there is judged to be growth or potential for growth, including some youth markets among whom smoking has until recently been uncommon.[80]

An Indian study showed very high exposure of children to tobacco product advertisements. In Uttar Pradesh, 8 in every 10 boys and girls saw a tobacco product (cigarette or *gutka*) advertisement on billboards and 6 in every 10 saw such advertisements in other media. One in every 5 students was offered free cigarettes from a tobacco company representative. Six out of every 10 students in Uttar Pradesh said they saw cigarette advertisements on TV, in the newspapers and at social events.[82]

Current cigarette smokers are significantly more likely than never-users to report watching cigarette advertisements in the print media, including newspapers. Current cigarette smokers were 12 times more likely than never-users to report being offered free cigarette samples by a tobacco company. Even exposure to *gutka/paan masala* advertisements on billboards was reported to be very high.

Current smokeless tobacco users are significantly more likely than never-users to report watching *gutka/paan masala* advertisements in the print media, including newspapers. Current smokeless tobacco users were five times more likely than never-users to report being offered free *gutka/paan masala* samples by a tobacco company. In Uttar Pradesh, over half of the students (53%) had seen several *beedi* advertisements on billboards and nearly one-third saw them at social events (31.1%). Current *beedi* smokers (69.7%) were significantly more likely than never-users (36.1%) to report watching *beedi* advertisements at social gatherings.[82]

To achieve an impact on tobacco consumption by the youth, measures such as increased health education should be combined with a ban on advertising. A combination of an increase in tobacco prices and a complete ban on advertising has proved to be more effective than either measure on its own.[79]

Outdoor advertising

Outdoor advertising (e.g. billboards or posters) has always been heavily used by the tobacco industry. Voluntary restrictions on outdoor advertising, such as agreements not to place advertisements on billboards within a certain distance of schools, have not been effective in international experience. One study showed that despite such an agreement, during a 6-month period in 1994, tobacco advertisements were posted on two-thirds of the billboards near schools. In 1995, tobacco advertisements were posted near 40% of the schools.[79]

Tobacco advertising and display of tobacco products at the point of sale

Point-of-sale advertising and promotion directly influence the products and brands that children buy and use. Point-of-sale advertising and promotions target and attract shoppers right at the places where they can immediately buy the specific products or brands. More specifically, point-of-sale tobacco advertising and promotion may have a direct impact not only on which brands of cigarettes children buy but also on the number of children who buy cigarettes.[83]

Any weakness in the legislation regarding advertisements would lead to misuse of the gaps in the tobacco lobby. It has been recommended that the following fundamentals be incorporated into legislative drafts:[74]

- Prohibit any advertisements of any kind everywhere, including at the point of sale.
- Prohibit advertising of price discounting; for example, no 'was/is' signs, no crossed out prices with the new price underneath. Price discounting is attractive to children and teenagers who are price sensitive.
- Ensure that the prohibition covers all potential and actual gimcracks, baubles and gimmicks.

Ensure that it precludes flags, banners, clothing, mobiles, wall hangings, carpets, coin mats, clocks, watches, internally lit revolving cabinets and objects in associated colours and themes, as well as colour coding, etc.

- Prohibit lighting directed at product displays.
- Prohibit value-added marketing devices such as give-aways with products; for example, cigarette lighters, calendars, books, maps, diaries, CDs, toys or cosmetics. These are particularly attractive to children.
- Prohibit display in association with or near products marketed for children (such as toys, videos, candy, sweets, crisps).
- Prohibit toys or confectionery that resemble tobacco or cigarettes.
- Prohibit audible as well as visual advertising.
- If possible, prevent misleading statements such as 'light' or 'mild'.
- If possible, prohibit the industry from making false or misleading statements to retailers about display legislation. This particular provision in the Tasmanian legislation has proved invaluable in preventing tobacco representatives from telling retailers that a particular display is lawful, when it is not. This provision has substantially enhanced the efficacy of enforcement mechanisms.

There are other useful legislative actions that should be tied or linked to the primary tobacco legislation. Licensing of tobacco product sellers might help to find the seller, cancel the license in case of violation of legislation and generate revenue from the licensing process, which can be used for the enforcement process. Infringement notices improve compliance rates, allow swift and sure 'punishment' for breaches of display provisions, without the complexity and cost of launching prosecution action, and have an immediate 'educative' effect on retailers.[74] There should be large notices in shops regarding the legislation and should include health warnings (both graphic and written), as well as information about who to contact in the government regarding breaches and access to cessation programmes.[74]

Nominated officers might be appointed and trained to undertake enforcement and education work, and empowered by legislation to issue on-the-spot fines. Such an enforcement regimen markedly enhances community involvement in tobacco control activities, and reduces reliance on governments.[74]

Other forms of tobacco promotion

As more and more countries impose total or partial bans on tobacco advertising, the industry is finding new ways to publicize their brands, especially among the youth. Such 'indirect advertising' methods include: sponsorship of sports or cultural events; displays at points of sale; 'brand stretching', where tobacco brand names are used as part of other product names; product placement in television and film shows; direct mailing, special sales promotions and samples.[78]

Tobacco companies consistently predict that bans on advertisement will have a severe adverse impact on advertisers, the media and the economy as a whole. In most cases, however, tobacco advertising constitutes only a small percentage of the total advertising revenue, minimizing the economic impact on media outlets currently accepting tobacco advertisements. Several studies have shown that despite a total ban on tobacco advertising on television and radio, the advertising revenue went up by 500% in Hong Kong and 42% in Thailand.[78]

Implications for India

The Cigarettes and Other Tobacco Products Act, 2003 has banned direct and indirect advertising of all tobacco products. However, advertising has been permitted at the 'point of sale' of tobacco products. The restrictions placed on display boards at such sites are not being strictly observed by vendors and the tobacco industry. Further, there is the danger that the industry may rapidly increase the number and type of outlets where tobacco products are sold and

festoon markets with display boards at supposed 'points of sale'. It is, therefore, ideal if the Act is amended to extend the ban to such 'point-of-sale' advertising as well. The danger of cleverly disguised surrogate advertising also exists and needs to be carefully monitored and countered through effective enforcement of the Act.

It has been found that only restrictions on content and placement of advertisements or bans in one or two categories of the media are not effective. However, the evidence suggests that tobacco control programmes with comprehensive advertising bans would reduce tobacco consumption. Counter-advertising, where the media is used to promote public health, also reduces cigarette consumption. The taxation on advertising has also been found to reduce total advertising with the additional advantage of raising revenue that could be used to fund counter-advertising. Therefore, policy options for a comprehensive ban on tobacco advertising might include limitations on the content of advertisements, restrictions on the placement of advertisements, restrictions on the time that cigarette advertising can be placed on the broadcast media, total bans in multiple media, counter-advertising, taxation on advertising, and prevention and penalizing of cross-border advertising (as discussed in Section 6.3).[81]

7.4 POLICY INTERVENTION: COMPREHENSIVE BAN ON ADVERTISING

KEY MESSAGES

- There is convincing evidence that tobacco advertising plays an important part in encouraging non-smokers to begin smoking.
- When countries ban tobacco advertising in one medium, such as television, the industry can substitute advertising in other media with little or no effect on overall marketing expenditures.
- Comprehensive bans on tobacco advertising and promotion can result in a considerable reduction of tobacco consumption at the national level.
- A complete ban on advertisements coupled with an intensive public information campaign on the ill effects of using tobacco products will lead to a reduction in tobacco consumption by 6%.[79]
- In India, surrogate advertisements are still prevalent in the media and the existing laws need to be strengthened and enforced.

7.5

Policy Interventions: Packaging and Labelling of Tobacco Products

Several studies have revealed that many smokers still do not know that tobacco causes disease and premature death, while many others know little beyond a vague notion that 'smoking is bad for you', even in developed countries such as the USA. [84] This is even more true of developing countries and of non-smoking forms of tobacco use. Thus, in developing countries such as India, there is a clear need for effective ways to alert tobacco users about tobacco-related health risks associated with all forms of tobacco use and inform them about the benefits of quitting.[84]

Consumer protection laws in some countries require that information be provided to smokers about the health effects of tobacco use.[84] A tobacco product manufacturer generally has a legal duty to warn consumers of any foreseeable hazards associated with the product so that consumers may exercise 'informed choice' in deciding to use the product. While many tobacco users in the world generally know that tobacco use is harmful, studies have shown that most smokers are unaware of the true risks, even in countries in which there is a great deal of publicity about the health hazards of tobacco. Smokers tend to be even less aware of the risks of tobacco smoke on others.[85] The information provided on the packaging of tobacco products is an obvious and essential mode of communicating these messages to tobacco users.

Many countries have introduced regulations related to the packaging and labelling of tobacco products. The Government of India, in the Cigarette Act, 1975 had called upon all packages and advertisements of cigarettes to carry a statutory warning, 'Cigarette smoking is injurious to health'. The Act provided specific instructions related to minimum font size, colour contrast, etc. However, these guidelines were often not followed.[85] A recently enacted legislation for tobacco control, the Cigarettes and Other Tobacco Products Act, 2003 contains provisions such as inclusion of a mandatory health warning, which is legible and conspicuous (detailed in Section 6.1).[86]

The FCTC has provided guidelines for the packaging and labelling of tobacco products and called upon countries to adopt and implement, in accordance with their national laws, effective measures to ensure that tobacco product packaging and labelling do not promote a tobacco product by any means.[87]

Effectiveness of health messages

There is sufficient evidence to show that prominent health warnings and messages on tobacco product packages increase both the awareness of risks and the desire to quit among smokers. The rotation of messages has been found to help in keeping this information from becoming stale and boring. Health messages continue to be effective, even if the population has become more informed about the dangers of tobacco use over time, provided the messages are sufficiently prominent and contain hard-hitting factual information. It was reported that, in Brazil, calls to the Quit Tobacco hotline for cessation assistance increased by almost 300% after picture-based warnings were introduced.[88]

The tobacco industry has responded to these packaging regulations by devising methods to evade or subvert the spirit of health warnings and reduce their efficacy. In recognition of such industry tactics, it is advisable to include prescribed messages on individual sticks of smoked products and individual portion pouches of smokeless products.[88]

In Canada, there has been widespread support for the health warnings on cigarette packages.

For most people, these warnings are an accurate and important source of information. Most smokers have been found to read the health messages every day. More than 7 in 10 adult smokers and almost 9 in 10 youth smokers consider health warnings to be effective as they inform them about health effects, compel them to smoke less around other people, make smoking less attractive and increase their desire to quit smoking.[89]

Smokers who read, think about and discuss health warnings are more likely to quit, attempt to quit or reduce their smoking. Health warnings would be more effective if their content is more positive and if the negative messages about the health impacts of smoking are combined with positive messages about the benefits of quitting smoking.[89]

Experience from other countries shows that for youth smokers, cigarette packaging is a major source of information about the health effects of smoking. It is reported that youth smokers look at the packaging more often than adult smokers and they are frequent readers of health information messages on the back panel of cigarette slide-and-shell packs.[89]

Studies from Canada indicate that tobacco labelling should be such that even people with low literacy skills are able to read and understand the messages. If the words, images and concepts used in the health warnings are unable to communicate the message effectively to this group, they are more likely to reject the messages than make an effort to understand them.[89]

In developing countries, it is important to target people who consume tobacco products, as not many of them have access to information about the hazards of smoking. Large health warnings are likely to detract them from the glamour and appeal of tobacco packages, making them less likely to be seen as stylish accessories. Strong warnings might also help to create a social milieu where non-smoking is the norm. They might motivate smokers to find help if they want to quit.[84]

Health warnings are weak, small or non-existent in many other parts of the world, especially in developing countries. It has been reported that more than 40 developing countries do not require any warnings at all.[84] Developing countries receive inferior information about the hazards of smoking, which is not justifiable, especially since about 80% of the world's smokers live in developing countries. Therefore, there is a need for detailed specifications to be included in the legislation or regulations governing the information required on tobacco packs, to prevent companies from making health warnings difficult to read or weak in content.[84]

Health warning message labelling on the product package is a critical component of a comprehensive tobacco control strategy. Health warning message labels are a cost-effective way to inform the public, especially smokers, of the hazards of tobacco use. The impact of health warning messages should be regularly evaluated for their effectiveness.[90]

Characteristics of effective health warnings

The WHO and World Bank recommended that effective health warnings should have the following characteristics.[84]

Content

To be effective, health warnings should contain a clear and unequivocal message about the dangers of tobacco use, in simple and stark terms (Box 7.7).[84] The wording of the message should be simple, in the principal languages of the country. The nature and extent of risk, and how to avoid or reduce the risks should be explained and addressed directly to the reader using the word 'you'. Technical language should always be avoided. The use of marker words, such as 'WARNING', has been suggested.[84]

Information about sources for help in cessation (e.g. a toll-free quit line number, an Internet

Box 7.7 Examples of good warning messages[84]

- Cigarettes are highly addictive.
- Quitting now reduces your risk of serious disease.
- Tobacco smoke hurts babies.
- The smoke from your cigarette harms people around you.
- Smoking causes lung cancer.
- Tobacco can make you impotent.
- Children who see adults smoking are more likely to start smoking.
- Smoking when pregnant harms your baby.
- Smoking causes bad breath, tooth loss and mouth cancer.
- Smoking can cause a slow and painful death.
- Smoking clogs your arteries and causes heart attacks and strokes.

and/or physical address where more information is available, quitting tips, and/or advice which helps in quitting) should also be included. Misleading terms, such as 'light', 'low tar', or 'mild', which give the wrong impression that tobacco at lower tar and/or nicotine concentrations is safer, should be banned.[84]

Format and font

The warning message should be printed in easy-to-read black type on a white background (or vice versa) and large, upper case letters should be used. Glossy surface coatings and metallic inks should be avoided. A flat or matte finish will make the warnings legible under a wide range of lighting conditions. The text should be indelible and irremovably fixed, and a black border should surround the message in a way that does not interfere with the text of the warning or the information given.[84] There is also evidence that limiting colour choices to black and white, to achieve maximum contrast, also enhances recall. Regulations should be based on performance standards designed to ensure that consumers achieve recall rates of the health warning information comparable to recall rates for other aspects of the package, including brand name.[91]

Location

The health warnings should be on the top of the front and back of the package. The warning should not be hidden or obscured by other written or pictorial matter, or when the packet is open.[84]

Pictures

Experience with pictograms in Canada and Brazil shows that large warnings combined with photos are effective in discouraging smoking and increasing public awareness of the health effects of smoking. In a study conducted among 633 Canadian smokers nine months after new, large pictorial warnings were introduced, 58% reported that the pictures had made them think more about the health effects of smoking; 44% said that the new warnings had increased their motivation to quit smoking; and 38% of the smokers who tried to quit said that the new warnings were a factor in motivating their attempt.[84] In a study conducted in 2002 among 2216 Brazilians 18 years or older, 3 months after the introduction of new pictorial warnings, 73% of smokers approved of them, 54% had changed their opinion on the health consequences of smoking and 67% said that the new health warnings made them want to quit.[84] There was a strong impact on low-income and -education groups. In Australia, it was found that stronger warning labels resulted in a 29% increase in the percentage of people who 'always noticed' the warnings, and a 7% increase in people who did not smoke at least once due to the warnings.[84]

In Canada, the top half of the front as well as back of cigarette packages must show one of 16 picture-based warnings. One of 16 additional detailed messages is required inside the package, either on an insert or on the inner 'sliding' part of the package.[84]

Health warning messages with pictures are accessible to illiterate people, and provide significantly more encouragement to quit and to not start smoking than messages without pictures. Pictures will help ensure that even illiterate people receive important information, empowering them to better protect their health. Apart from delivering new information, pictures elicit a visceral response in viewers, so their

Box 7.8 Examples of good pictures[84]

- Human heart with damaged muscles as a result of myocardial infarction
- Healthy lung and a lung with cancer
- Children and pregnant women
- Human brain showing the effects of a stroke
- Diseased mouth

impact is both cognitive (intellectual) and affective (emotional) (Box 7.8). The pictures should always be colourful and of the largest size possible to be effective.[84]

Recently, the European Union come up with 42 hard-hitting picture warnings for cigarette packs to deter people from smoking. Some of picture-based health warnings in Canada and the European Union are illustrated in Figs 7.5–7.8.

Package inserts

Additional health information could be provided through inserts similar to those used with prescription drugs, or on the inner 'sliding' part of packages that have them. Along with textual information on tobacco addiction and tips for quitting, inserts should also contain pictures that illustrate the hazards of tobacco.[84]

Timing

The time given to companies to implement new warnings should be just enough to use up existing stocks and print new packages. Although tobacco companies will typically ask for a longer time, a time allowance of 3–6 months has been found to be sufficient.[84]



Fig. 7.5 Canadian health warning providing information on the relationship between smoking and heart attack in Canada[92]



Fig. 7.6 Canadian health warning providing information on the harmful effects of smoking during pregnancy[92]



Fig. 7.7 European Union health warning providing information on the relationship between smoking and death[93]



Fig. 7.8 European Union health warning providing information on the relationship between smoking and heart diseases[93]

Disclosures of toxic substances

Among more than 4000 constituents of tobacco smoke, over 60 are known or suspected carcinogens. Studies from other countries have reported that many smokers are confused about the constituents of tobacco smoke. Therefore, to exercise informed choice, it is essential that tobacco product packages provide tobacco users with prescribed factual information on the toxic substances contained in the products and their smoke.[84]

However, it is important to recognize the problem with tar, nicotine and carbon monoxide (CO) measurements, and disclosures of these based on current testing methods.[88] These measure-ments are now recognized to be misleading. Firstly, human smoking patterns vary greatly and are not mimicked by the machine. Secondly, modern cigarette designs facilitate compensatory smoking (over-inhalation), which may lead to the smoker taking in much greater amounts of tar and nicotine than are measured by the machine. The tobacco industry uses the measurement for its own benefit by using descriptors such as 'light' and 'mild' on packages. Such terms falsely reassure smokers who might otherwise have quit the habit.[94]

Experiences from other countries suggest that the machine-measured figures for tar, nicotine and CO should be removed from the packet, and a realistic measure must be established for regulatory purposes. The health warnings qualitatively deal very well with the risks of smoking, whereas misleading figures on the packet can only do harm.[94] The WHO's Scientific Advisory Committee on Tobacco Product Regulation (SACTob) also recommends that placing quantitative estimates of tar and nicotine on tobacco products should be avoided. However, consumers should be informed of the existence, if not the levels, of these and other hazardous constituents, such as tobacco-specific nitrosamines, polycyclic aromatic hydrocarbons and a host of others, and of the dangers they pose.[88]

Studies have found that smokers clearly support the inclusion of toxic emissions' information on packaging. One-half of adult smokers and 6 in 10 young smokers look at or read the toxic emissions statements on the side of cigarette packages.[89]

A qualitative study has reported that the most effective texts were short, clear and simple, and presented only one substance with information on the impact that the substance has on health.[89]

Generic packages

From the tobacco industry's perspective, the primary job of the package is to create a desire to purchase and try the product. Therefore, cigarette packaging can act as an advertisement. When advertising is banned or strictly regulated, the package could become a very important marketing tool. With more and more regulations coming up for controlling tobacco, tobacco companies will focus on new areas of opportunity which do not rely on conventional media, such as new types and forms of packaging that can act as a means of communication as well as using famous trademarks from other fields on tobacco products and sponsorships.[88]

Generic packaging is an important tobacco control measure. Generic packaging for tobacco products is plain, standardized packaging stripped of its marketing appeal. The objective of generic packaging is to 'denormalize' tobacco product use and prevent the tobacco package from being an alluring advertisement that undermines health messages, confuses consumers about the risks of tobacco use and otherwise detracts from the government's attempts to ensure that consumers are aware of the hazards of tobacco use. It has been suggested that packages should be generic both inside and outside.[88]

Studies in many countries have found that that plain packaging would reduce experimentation and ongoing smoking among adolescents.[88] A significant majority of adults refused to buy

Marlboro cigarettes at half-price when they were packaged in generic brown boxes, despite the fact that they were assured of the original quality. Apart from these, health messages on plain packages were found to be more noticeable and their presence more easily recalled than messages on traditional tobacco packages.[88]

Labelling as a measure to control smuggling

Tracking and tracing labelling requirements such as manufacturer identification, countries of origin and destination, tax stamp markings, etc. are important to prevent smuggling. Tracking is the systematic monitoring of the movement of tobacco products from the place of manufacture, where all relevant duties and taxes have been paid, for the purpose of assisting the competent authorities to detect, investigate and analyse illicit manufacture and illicit trafficking. Tracing means the ability of competent authorities to recreate the route taken by a tobacco product from the place of manufacture through the distribution chain to the point where all relevant duties and taxes have been paid.[88]

Package size

Many countries have prohibited the sale of single or unpackaged tobacco products, or packages below a minimum size, which tend to be more affordable and accessible to the youth, who are especially price sensitive. Selling tobacco products in packages also ensures that consumers are provided with the prescribed messages, toxic substance disclosures and other important labelling information. If sales of single cigarettes are prevalent because of a large informal sector, it has been suggested that the manufacturers should place prescribed messages on individual sticks of smoked products as well as on packages.[88]

Size of health warnings

Belgium has the world's largest tobacco warnings (roughly 55% of the package, front and back) whereas in Brazil, 100% of one principal display panel must consist of a pictorial health warning. In Canada, health messages comprise at least 50% of the package's front and back panels, and provide graphic pictorial depictions showing the health effects of tobacco use.[88]

Ideally, the warning/information label should cover at least 50% of both the front and back of the package. Warnings must be large enough to be easily noticed and read. The credibility of warning messages, as well as the perceived risks from tobacco use, increases proportionately with increases in the size of the warnings.[84]

The tobacco industry's tactics

When Brazil enacted its law requiring graphic pictures on tobacco product packages to accompany its health warnings, the tobacco industry tried to delay implementation, arguing that it did not have the technical capacity to comply with the new requirements for pictures. The tobacco industry often uses such tactics to delay or prevent the implementation of stringent laws against tobacco (discussed in Section 6.5). The industry also argues that there will be economic and job losses in the packaging and printing industries, as well as increased smuggling due to labelling requirements. However, these arguments are without basis and are merely delaying tactics.[88]

Experience from many countries shows that the tobacco industry usually tries to delay or block more effective warnings. Governments should be prepared to face these legal challenges, which are often based on constitutional rights such as free speech, or trade practices. The case for tobacco control measures, including stronger health warnings, is compelling, especially from a human rights' and consumer rights' perspective. Health-warning regulations should specify that displaying health warnings on tobacco products does not relieve tobacco companies of their liability for damage caused by the use of their tobacco products.[84]



Fig. 7.9 Examples of proposed health warnings on tobacco products in India, which are being field-tested[95]

Health warnings on smokeless tobacco products

In India, apart from cigarettes or other smoking tobacco products, smokeless tobacco products should also carry the most effective labels possible, due to the serious risk of disease and addiction they pose, and because smokeless tobacco use is widely prevalent among children and adolescents.[91] Studies on Canadian labels have found 51% higher total recall rates for oral snuff packaging, and 65% higher total recall rates for chewing tobacco packaging, which justifies the requirement of labels that are at least as large as those in Canada.[91]

The size of current smokeless tobacco products packages in India is such that they can easily be carried in the pockets and it is very difficult to recognize the warning messages on them. Therefore, it is advisable to considerably increase the size of smokeless tobacco packages. In addition to conveying proper health warning messages and making them difficult to carry, bigger packages also increase the cost of production for tobacco companies.

Health warnings in India

The Cigarettes and Other Tobacco Products Act, 2003, has asked for the inclusion of a mandatory health warning, which should include a picture of a skull and cross-bones and may include other pictorial warnings.[86] Figure 7.9 shows some of the proposed health warnings to be used on Indian tobacco packages, which are being field-tested for their effectiveness.

7.5 PACKAGING AND LABELLING OF TOBACCO PRODUCTS

KEY MESSAGES

- The WHO and the World Bank recommended warning labels on tobacco products, which are an effective way to inform smokers about the hazards of tobacco consumption, encourage smokers to quit, and discourage non-smokers from starting to smoke.
- Warnings are effective only if they contain multiple, strong and direct messages that are prominently displayed.
- Health warning message labelling on the product package is a critical component of a comprehensive tobacco control strategy. Health warning message labels are a cost-effective way to inform the public, especially smokers, of the hazards of tobacco use.

7.6

Protection of Vulnerable Groups: A Human Rights' Approach to Tobacco Control

Good health should be an entitlement of every citizen. However, it is widely recognized that social, economic, and political conditions and forces influence both the underlying determinants of health and public policy, with conflicts of interest and contradictions featuring as causes and consequences. These contradictions in public policy are especially evident in the case of tobacco and its impact on health.

What is often not recognized, in the context of tobacco control, is the particular vulnerability of certain population groups for becoming the victims of tobacco. These include the poor, the young and women. In virtually every region of the world, the poor consume tobacco more frequently than the affluent sections of the society. Education, in particular, has a major effect on tobacco consumption. The higher the level of education, the less likely is tobacco use. The poor have less access to education and hence are more vulnerable to acquiring and maintaining tobacco use. The youth and women of all countries, but especially those of developing countries, have become prime targets for the tobacco industry, which seeks multitudes of new customers each year to replace the millions who die from the deadly effects of tobacco. They too are vulnerable in many respects, especially when poverty intertwines with their age- or gender-based susceptibility.

This requires that tobacco control policies must encompass a human rights' approach intended to protect vulnerable groups from the hazards of tobacco. This is particularly important because the tobacco industry frequently raises the bogey of tobacco control policies infringing the individual's right to free choice and also sounds the false alarm of the poor being adversely affected by such policies (*see* Box 7.9). This section examines the impact of tobacco on the poor and addresses issues related to tobacco control from a human rights' perspective.

Box 7.9 Tobacco control: Resolving the paradox of poverty

The poor use tobacco more frequently but the products that they use most often are not taxed because policy-makers are wary of increasing the tax burdens of the poor. However, the high burden of tobacco-related diseases among the poor, which will result from such a policy, are ignored. This paradox, of sparing the poor from tobacco taxes but not saving them from tobacco-related deaths, needs to be resolved through a tax policy that taxes all tobacco products and uses a large fraction of that revenue for welfare programmes intended to serve the poor.

The false argument advanced by the tobacco industry that tobacco control will propel many farmers and workers into poverty, is unquestioningly accepted by some policy-makers who oppose tobacco control measures. Yet, the poor (who consume tobacco in much larger numbers) are the worst victims of the tobacco trade, as indeed are the children who miss school to roll *beedis* and remain entrapped in the cycle of poverty. It must be recognized that tobacco control will alleviate poverty rather than cause it.

The poor are more affected by tobacco

A recent report by Economic and Social Council (ECOSOC) of the United Nations states that 'Tobacco consumption is a major direct contributor to increasing noncommunicable diseases and an associative contributor to communicable diseases such as tuberculosis. Poverty facilitates the spread of diseases and their treatment can impose a heavy financial burden on poor households. Tobacco entails heavy opportunity costs for poor households in which addicted tobacco users spend a significant amount of household resources on tobacco consumption. In developing countries, among

poor families, the proportion of household expenditures used to purchase tobacco products can easily represent up to 10 per cent of total household expenditures. This means that these families have less money to spend on basic items such as food, education and health care. In addition to its adverse health effects, tobacco use can lead to increased health-care costs and premature death. It also contributes to worsened malnutrition and a higher illiteracy rate if money that could have been used for food and education is spent on tobacco instead'.[96]

Globally and in India, smoking and smokeless tobacco use is higher among the poor than the rich and is accompanied by an increased risk and prevalence of tobacco-related disease and premature death.[97] *Beedis* and chewed tobacco (*gutka, paan masala,* etc.) constitute the largest percentage of tobacco use in India. Cigarettes used by the richer, more educated social segment account for only about 20% of tobacco use. *Beedis,* used to a larger extent by low-income groups, deliver more toxic products to the smoker than other smoked tobacco products. Thus, the burden of tobacco-related diseases is higher in this group. Increased taxes on cigarettes since the 1970s resulted in an increased consumption of *beedis*, which do not have the same taxation or legal requirements for packing and labelling as cigarettes, thus keeping their costs lower.

A study by Gajalakshmi *et al.* in Chennai,[98] found higher smoking rates among less educated men from the lower socioeconomic segments of society. Among illiterates, 64% of adult men smoked: in those with less than 6 years of schooling 58% smoked; with 6–12 years of schooling 42% smoked; and with more than 12 years of schooling 21% of adult men smoked. This marked gradient is in accordance with the worldwide trend of a higher smoking prevalence among the poor and uneducated.

An analysis of the National Family Health Survey (NFHS), conducted in 1998–1999, shows that tobacco smoking is inversely associated with educational status, with an illiterate person being three times more likely to smoke than a person with postgraduate education.[99] The scheduled castes and tribes, who constitute a socially and economically vulnerable group, were also more likely to smoke than other castes. A similar gradient was observed between the household standard of living and smoking, with smoking being 2.5 times more common in the lowest of five grades compared to the highest.[99] Smoking was also more common in rural areas and towns than in large cities.

Similarly, strong gradients were also observed for chewing of tobacco. The least educated were 1.8 times more likely to chew tobacco than the most educated. Scheduled castes and tribes were more likely to chew tobacco than other castes, and the houses with the lowest standard of living were twice as likely to chew as compared to the houses with the highest standard.[99] The National Sample Survey of 1995–1996 also reported that, across India, those below the poverty line have a 37% higher prevalence of regular use of non-smoking tobacco compared to those below the poverty line, an 8% higher rate of smoking, and a 28% higher rate of regular alcohol consumption. It is therefore likely that the poor will disproportionately suffer the sequelae of these risks in the future.[100]

Studies show that the poor consume the most toxic tobacco products, e.g. unbranded *beedis* manufactured with poor quality control and sometimes laced with other narcotic drugs. Tobacco quid is used by poor women and men to ward off hunger during long tedious work in agriculture, construction and other labour. Of the pavement dwellers in Mumbai, 86% used tobacco, 49% consumed raw tobacco 5 times a day, 20% chewed 7–8 sachets/day of *gutka*, 30% smoked 11–12 *beedis*/day, 24% chewed *paan* 4 times a day, and 8% smoked cigarettes.[101] On an average, 15% of their monthly earnings of Rs 4500 were spent on tobacco, in preference to meeting basic needs. Street children in Mumbai have a high rate of tobacco usage—46% use *gutka*, 39.5% *beedi*, 28% cigarettes and 14% plain *tambaku.*[101] In an informal study, 70%–80% of the over 100,000 street children in Bangalore were found to use tobacco products.

Table 7.9 Influence of education on tobacco consumption in north Indian males

Educational level	Urban (Delhi) *n*=1456 Age: 35–64 years (%)	Rural (Haryana) *n*=1070 Age: 35–64 years (%)	Industrial (suburban) *n*=2273 Age: 22–58 years (%)
Illiterate	61.4	83.3	78.6
Semi-literate	48.6	88.1	73.7
Undergraduate	41.3	70.3	52.8
Graduates/postgraduates	22.3	44.2	35.6

Table 7.10 Influence of occupation on tobacco consumption in north Indian males

Professional class	Urban (Delhi) *n*=1456 Age: 35–64 years (%)	Rural (Haryana) *n*=1070 Age: 35–64 years (%)	Industrial (suburban) *n*=2273 Age: 22–58 years (%)
Professional/big business/landlord	17.6	33	24.8
Clerical/middle-level business/middle-level farmer	32.1	61	36
Skilled labourer/small businessman/marginal landowner	57.1	81	45.2
Unskilled and semi-skilled labourer	64.1	82.4	63.5

Cross-sectional surveys conducted by the All India Institute of Medical Sciences during the 1990s revealed that tobacco consumption among males was inversely related to the level of education, with a higher prevalence among the illiterate and semi-illiterate (Table 7.9). This was true of urban, rural and industrial populations.[102] When analysed by professional class, a similar inverse relationship was observed, with unskilled and semi-skilled labourers being the worst affected by tobacco use (Table 7.10).

The ECOSOC report[96] also highlights similar facts from other developing countries:

- Some street children and other homeless people in India spend more on tobacco than on food, education or savings;
- A recent study in Bangladesh showed that over 10.5 million currently malnourished people could have an adequate diet if money spent on tobacco was spent on food instead;
- Poor, rural households in Southwest China spend over 11% of their total expenditure on cigarettes;
- Preliminary results from an ongoing study in 3 provinces of Viet Nam found that over the course of a year, smokers spent 3.6 times more on tobacco than on education, 2.5 times more on tobacco than on clothes, and 1.9 times more on tobacco than for health care;
- A study in Poland, in 1996, showed that the contribution of smoking to the risk of premature death among males at 35–69 years of age varies by education level; the risk of dying during middle age due to tobacco-related diseases was 5% among people with higher education and nearly double (9%) among persons with only primary and secondary education.

According to the WHO, tobacco and poverty create a vicious circle, from which it is often difficult to escape. Tobacco tends to be consumed by those who are poorer. In turn, it contributes to poverty through loss of income, loss of productivity, disease and death.[103] Based on this evidence, WHO observed the World No Tobacco Day 2004, with the theme of Tobacco and Poverty, conveying the main message that tobacco increases the poverty of individuals, families and nations. This is in contrast to over-simplistic and widespread arguments that tobacco provides wealth to governments and growers.

Interplay of poverty and gender vulnerability

The ECOSOC report draws attention to the global upward trend in women smoking, which is now becoming an issue in the developing world as well. It states 'The tobacco industry has already understood it and is heavily targeting women to gain a part of the market which was not available in the past. Tobacco advertising vehicles images for women featuring vitality, slimness, glamour, emancipation, etc... The new gender behaviour can also have adverse social and economic consequences. For example, it is known that women often have less disposable income than men and are more likely to spend it on their children. When more women start consuming tobacco at a higher rate, the diversion of scarce family resources for tobacco may significantly contribute to malnutrition and higher rates of school drop-out, with potential long term negative consequences.'[96]

Tobacco control and human rights

In 2001, the National Human Rights Commission (NHRC) of India considered the issues related to tobacco control from the perspective of human rights and concluded that the following rights of an individual are violated due to lack of tobacco control mechanisms in India:[104]

1. *Right to clean air*
   - A non-smoker is forced to inhale tobacco smoke in public areas.
2. *Rights of children*
   - Rights of born and unborn children are violated when they are exposed to tobacco smoke (active and passive) in the home or public areas. They are the most vulnerable and worst affected.
3. *Right to information*
   - Both the smoker and non-smoker are not provided with adequate information about the harmful effects of tobacco products and, in fact, are bombarded with misinformation about tobacco products through advertisements/events/celebrity- and role model-linked promotion.
4. *Right to education*
   - Both the smoker and non-smoker are not adequately educated about the drastic ill-effects of tobacco on their personal and public health.
5. *Right to redressal*
   - Both the smoker/non-smoker do not have any redressal mechanism for the injuries/ill-effects suffered by them due to tobacco products.
6. *Right to tobacco cessation programme/activities (as part of right to health)*
   - The smoker and his/her family have a right to have access to various cessation strategies.

In addition, there are also some rights of the smoker which may be violated by regulatory measures intended for tobacco control. However, these have to be superseded in the interest of public health and human rights of the larger community.

Based on this assessment, the NHRC recommended that:

- A comprehensive national tobacco policy should be evolved at the highest level, in consultation with all the stakeholders in public health.
- A multisectoral national-level nodal agency should be established for tobacco control with strong representation from the legal, medical and scientific communities.
- The right of people to access correct information related to the effects of tobacco consumption must be promoted through programmes of information, education and communication. Such programmes should be adequately supported through dedicated resource allocation.
- Assistance for smoking cessation should be integrated into the health care services.

Role of the government

Given the objectives of protecting and promoting public health, enabling conditions need to be created to help individuals make informed choices, to isolate the changing patterns of vulnerability and develop effective response mechanisms for combating the same. It is important to realize that the human rights' paradigm cannot operate in a legal vacuum. Some existing authority needs to enunciate the law and put into place appropriate enforcement and redressal mechanisms. This is where the government (state) comes in. To be able to respect, protect and fulfil its human rights' obligations, the government has to bring about well-defined legislation to facilitate the functioning of legal systems.

Today, the philosophy of 'responsive communitarianism' is gaining popularity among wide sections of society. This essentially means balancing individual rights with social responsibilities, or individuality with the community. The collective rights of the community must have precedence over the rights of the individual smoker, especially since tobacco is now well recognized to be a 'public bad'. In asserting these principles, the government must also recognize the special obligation to provide for the poor and less educated sections of society whose right to correct information is least respected by the tobacco industry. Even in the safeguarding of rights, special protection needs to be provided to vulnerable groups.

The fundamental reciprocity between health and human rights is well established and the need to put in place a proper regulatory framework to aid and nurture this synergy should be the guiding lights of policy-makers and analysts in this field. This is even more true of tobacco control than of many other policies related to public health.

KEY MESSAGES

- The poor, the young and women are particularly vulnerable for becoming the victims of tobacco.
- Tobacco control policies must encompass a human rights' approach to protect vulnerable groups from the hazards of tobacco.
- Tobacco smoking is inversely associated with educational status.
- Homeless people in India spend more on tobacco than on food, education or savings.
- Enabling conditions must be created to help individuals make informed choices.

7.7

Community Interventions: Protecting the Youth from Tobacco

In 1996, Peto *et al.* estimated that unless current trends changed, some 30%–40% of the 2.3 billion children and teenagers in the world would become smokers in early adult life. Unless action is taken now, about 250 million of these future smokers will be killed by smoking.[105]

It is estimated that, as in other developing countries, the most susceptible time for initiation of tobacco use in India is during adolescence and early adulthood, i.e. in the age group of 15–24 years. The majority of users start using tobacco before the age of 18 years, while some even start as young as 10 years. It is estimated that 5500 adolescents start using tobacco every day in India, joining the 4 million people under the age of 15 years who already use tobacco regularly.[106] This early age of initiation points to an urgent need to plan effective interventions for this vulnerable age group.

The Government of India has been actively working towards enforcing legislations to prevent young people from having any access to tobacco. The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003 enforced from 1 May 2004 has provisions to protect the youth in India. The Act prohibits the sale of tobacco products to minors as well as within 100 yards of any educational institution.

One of the major goals of any tobacco control effort is to prevent people from starting or experimenting with tobacco. The target group should be the youth who are primarily non-users and are vulnerable as the industry especially targets them.

Issues involved

Availability

The youth start using tobacco even before they can understand its consequences, and the fact that tobacco is addictive prevents them from quitting when they become aware of its harmful effects later in life. One of the goals of any tobacco control policy should be to ensure that tobacco products are neither available by direct sale nor accessible through other sources to youth.

Ban on sale to minors

Article 16 of the FCTC mentions about banning sale to minors. The existing literature provides mixed evidence on the effects of banning sale to minors in reducing tobacco use among youth.

Wassermann *et al.* studied the impact of state laws that restricted the sale or distribution of cigarettes to minors. They found that although these laws reduced the teenager's probability of taking to smoking, it did not affect the average consumption by young smokers. They attributed the latter to the weak enforcement of these laws and vendors' poor compliance with the law.[107] A study by Jones *et al.* showed that enforcement of youth access laws led to a decrease in minors purchasing in stores but there was a significant increase in giving someone else money (social source) to buy cigarettes for them.[108]

There have been different viewpoints opposing the ban on sale to minors. It has been commented that youth access programmes which prevent the sale of cigarettes to teenagers are ineffective and a drain on limited resources. It has also been expressed that such bans are counterproductive because they reinforce the tobacco industry's 'smoking is a way to look adult' message.[109]

Non-availability of tobacco products around educational institutions

To restrict free availability of tobacco products to minors, one easy strategy is to ensure that tobacco products are not sold near educational institutions.

Increasing prices through taxation

One of the mechanisms to raise tobacco prices is taxation. A fundamental principle related to taxation is that taxes which generate substantial revenues while minimizing welfare losses associated with the higher prices resulting from the taxes, are preferable to those that result in higher welfare losses. In the short run the demand for tobacco products is relatively inelastic. Thus, an increase in tobacco taxes, although leading to reduction in use, will lead to significant increases in revenue.[110] Increasing prices through tax increases is the single most effective intervention to reduce tobacco demand. It has been seen that a 10% price rise will lead to a 4% reduction in demand (price elasticity of −0.4) in high-income countries, and 8% reduction in low- and middle-income countries (price elasticity of −0.8). It has been seen that young people, people belonging to a low socioeconomic group and less educated people are more price responsive.[111] It has been estimated that tax increase which would increase the real price of cigarettes by 10% worldwide will lead to 42 million smokers of the 1995 cohort quitting and would prevent 10 million premature tobacco-related deaths among them.[111] In a study in the USA, it was seen that increasing the price of cigarettes increases the number of young adults who quit smoking. The average price elasticity of cessation was −0.35, i.e. a 10% increase in price will lead to 3.5% reduction in demand.[112]

Increases in the price of cigarettes will decrease the prevalence of smoking and the number of cigarettes smoked both by the youth and adults. Lower-income and minority smokers were more likely than other smokers to be encouraged to quit in response to a price increase and would thus obtain health benefits attributable to quitting.[113]

The change in smoking behaviour is most dramatic among the youth exposed to the largest price increases, suggesting a sustained impact of higher price on cigarette consumption. Large cigarette tax increases would result in both substantially higher quitting rates and a considerable drop in smoking intensity.[114]

Gender difference

Young men are much more responsive to changes in the price of cigarettes than young women. The price elasticity for young men is almost twice as large as that for young women.[115]

Restricting access through regulating packaging sizes

Ensuring that cigarettes and *beedis* be sold only in bigger packs of twenties or more will restrict purchase by the youth who have limited resources to buy these products. Similarly, chewable tobacco (such as *gutka, khaini,* etc.) is

Box 7.10 Tobacco tax policy

A good tobacco tax policy will seek to do the following:[116]

1. Raise the price of tobacco products substantially. To maximize impact, each tax increase should increase consumer prices by at least 20%.
2. Ensure that tax levels are not eroded by inflation. In some countries, for example, in Australia and New Zealand, tax rates are increased regularly in line with increases in consumer prices. Tobacco taxes should be increased frequently and should account for the rise in disposable incomes.
3. Prevent loopholes that would direct consumers to switch to cheaper tobacco products. This entails that there be no price differentiation between various forms of tobacco products.
4. Link the tobacco tax policies to overall tobacco control policies to highlight the health basis to the tax, i.e. to show the health benefits in terms of reduced consumption and the fact that the revenue generated can be used for promoting health. Tobacco taxes should not only be a mechanism for revenue generation but can also be used for tobacco control measures, such as spreading health awareness among youth and adults, and providing tobacco cessation strategies such as nicotine replacement therapy (NRT).
5. Take measures that will prevent the smuggling of tobacco products.

currently available in sachets, which make these products available at a very low cost. It is important that the packaging sizes of all tobacco products be regulated in India. Increasing the sizes of tobacco product packages would ensure that the cost is high enough to make it less affordable for the youth, who are tempted to experiment with these tobacco products due to their small packaging size which makes the product easily accessible to them for purchase and concealment.

Awareness and advocacy

It has been well established that awareness and advocacy related to tobacco avoidance and control prevents or reduces tobacco use among youth.[117–119] In India, it has been seen that students in whom school-based interventions were carried out were less likely to receive offers, experiment with or intend to use tobacco.[117] Among regular smokers, it was found that those who were engaged in anti-tobacco advocacy were more likely to reduce their own use. The decrease was sustained even after six months. The goal of the advocacy programme was to increase the student's awareness of the factors in the school and community environment that promote cigarette use.[118]

A well-designed public education campaign that is integrated with community- and school-based programmes, strong enforcement efforts, and help for smokers who want to quit, can successfully counter tobacco industry marketing. Such integrated programmes have been demonstrated to lower smoking among young people by as much as 40%.[119] A 15-year follow-up study as part of the North Karelia Youth Project showed that the reduction in tobacco use produced by a mass media intervention combined with a school- and community-based education programme lasts over time. The mean lifetime cigarette consumption was 22% lower among programme subjects than among control subjects.[119]

The Massachusetts Tobacco Control Campaign, which has a sizeable public education component, has been effective in increasing public perception of the harms of cigarette smoking, and is associated with a substantial decline in cigarette consumption. A 1997 independent evaluation of the Massachusetts campaign found that tobacco consumption dropped by 31% from 1992 to the first half of 1997—more than triple the rate of decline observed for the rest of the nation.[119]

In its early years, the California Tobacco Control Programme produced a 10%–13% long term decline in cigarette consumption, with about a fifth of the decline caused by the media campaign alone. A study found that the California anti-tobacco media campaign reduced sales of cigarettes by 232 million packs between the third quarter of 1990 and the fourth quarter of 1992.[119] A 1995 study of California's anti-smoking programme found that anti-smoking media campaigns are an effective way of reducing cigarette consumption, and noted that higher funding levels produced more powerful results.[119]

A 1994 study determined that anti-smoking advertising decreased smoking beyond the effects of school-based interventions. Students who were exposed to the media plus school interventions were found to be at lower risk for smoking than those only receiving school interventions.[119] A 1992 study found that a five-year intervention involving a media campaign, community programmes, and school-based instruction resulted in significantly lower smoking rates. At the end of high school, just 14.6% of students in the intervention community were weekly smokers, compared to 24.1% of those in the control community.[119] A 1997 study found that, in terms of cost per years of life gained, mass media and education campaigns are currently among the most cost-effective methods available to prevent or reduce tobacco use.[119]

Researchers have mixed views on the success of awareness programmes among the youth. Though some programmes have shown a positive impact on increasing knowledge, positively altered attitudes of youth and reduced tobacco use among them, there have been a few

unsuccessful school health programmes that failed to demonstrate a posi tive impact.

An opposite effect was seen in a school-based programme in Montreal, where it was seen that children exposed to the programme were more likely to initiate and continue smoking than children in the control group. The reason for this was inadequate attention in programme development to the diverse cultural origins of the population targeted.[120] Cultural differences play an important role in comparing school health programmes globally. The strategies and channels of intervention delivery are the most crucial elements to be taken into account. In a country such as India, involving teachers in intervention delivery has proven to be very effective as teachers' viewpoints are given the highest priority by the youth when they are in school. This may not necessarily be true in other countries, especially in the West.

Comprehensive ban on advertisements and counter-advertising

A comprehensive ban includes a ban on advertisements of tobacco products in all direct and indirect forms, i.e. print and mass media, point-of-sale advertisements, ban on surrogate advertising or brand stretching, and should also include effective counter-advertising.

Tobacco advertising and promotion increases the likelihood that adolescents will start to use the product. The impact of tobacco advertising on the youth is a well researched area globally. Non-smoking adolescents who were more aware of tobacco advertising or receptive to it were more likely to have experimented with cigarettes or become smokers at follow-up.[121] Receptivity to tobacco advertising and promotion is an important factor in progressing from experimentation to established smoking among adolescents.[122] Advertising lures gullible youth and children through glamorous and deceptive promotional stunts. Advertisements project tobacco use in congenial surroundings or associate the brand name with idolized role models, legitimize the habit in young minds and project the use of tobacco as being socially acceptable.

There is a strong temporal and causal relationship between viewing smoking in films and initiation of smoking among adolescents. For example, it was shown that 12- and 13-year-old boys whose favourite television sports included motor racing (sponsored by tobacco companies) were twice as likely to become regular smokers compared to those who did not watch it.[123,124]

Point-of-sale tobacco advertising has the potential to increase significantly positive brand user imagery, and hence not only adds to long-term user imagery, but would increase the likelihood of impulse purchasing.[125] This is relevant to the Indian context, as the Indian Tobacco Control Bill of 2003 permits point-of-sale advertising while banning all other forms of advertising.

Evidence suggests that comprehensive bans on tobacco advertising can reduce tobacco consumption. A partial advertising ban has little or no effect because of the opportunities for substitution by other forms of advertising.[111] In spite of the fact that anti-tobacco advertising has a protective effect, it is unable to counteract the effects of pro-tobacco advertising.[126]

Anti-smoking advertising appears to have more reliable positive effects on those in pre-adolescence or early adolescence by preventing experimentation. The effects of anti-smoking advertising on youth smoking can be enhanced by the use of other tobacco control strategies, and may be dampened by tobacco advertising and marketing.[127] Because perceived ability to quit makes adolescents more likely to progress to experimentation and repeated use, counter-advertising should include messages about addiction and the difficulties associated with quitting.[122]

Advertisements designed to discredit the tobacco industry should mention specific companies, to make the counter-advertising more effective. This will ensure that people know about the

tobacco industry's corporate identities, and young people who know about these identities tend to view the company less favourably.[128]

Intensive and sustained efforts to 'counter-market' tobacco among teenagers are essential to negate the friendly familiarity of the tobacco industry and to communicate the true health and social costs of tobacco use. These should highlight a tobacco-free lifestyle as the majority lifestyle of diverse and interesting individuals. Constructive alternatives to tobacco use should be offered and the dangers of tobacco use explained in a personal and emotional way.[129]

Some other examples of the positive effect of counter-advertising on the youth are discussed below:[119]

1. A 2002 report of the Florida Youth Tobacco Survey showed that between 1998 and 2002, current cigarette use among middle school students declined by 50%, and current cigarette use among high school students declined by 35%. These declines followed the implementation of the Florida Pilot Program on Tobacco Control, which included an aggressive counter-marketing media campaign.
2. A 2000 study showed that youth in Massachusetts, 12–13 years of age, who reported exposure to anti-smoking television advertisements at baseline, were significantly less likely to have progressed to established smoking at follow up than youth who did not report exposure to anti-smoking television advertisements.

Establishing anti-tobacco norms

Social group interactions, through family, peer and cultural contexts, can play an important role in reinforcing, denying, or neutralizing the potential effects of anti-smoking advertising.[127] It has been seen that peer pressure is an important influence for tobacco use among adolescents.[130]

Introduction to positive, healthy role models, added to established anti-tobacco norms, can tremendously curb the desire of the youth to experiment with tobacco products.

Restriction of smoking in schools, the home and public places

Smoke-free workplaces reduce the prevalence of smoking as well as its consumption. The combined effect of people quitting smoking and reducing consumption reduces total cigarette consumption by 29%.[131]

Regulations restricting smoking in public places appear to have a considerable impact on teenage smoking behaviour. In contrast to adults, regulations affect the teenager's decision to become a smoker rather than the number of cigarettes smoked.[131] Smoking restrictions in the home and bans in public places allow a limited opportunity for smokers to smoke. The mere existence of a school ban had no effect, but enforced school bans were associated with up to 11% reduction in the uptake of smoking.[132]

Schools with smoking policies have lower rates of smoking among students.[133] Teachers who smoke make smoking seem safe and acceptable. The school policy must address both teachers' and students' smoking. Colleges with a no-smoking policy for both staff and students have been shown to have the lowest prevalence and their students smoke fewer cigarettes.[134,135] An Indian study also revealed that in schools which have enforced a no-smoking policy, teachers smoked less compared to schools having no such anti-smoking policy.[136]

Tobacco cessation

Many of the measures mentioned above such as raising the cost of the product, reducing access, and comprehensive tobacco education are effective in reducing tobacco use among the youth. Additionally, tobacco cessation services in the form of counselling for behavioural modification should be provided to the youth.

Tobacco cessation is described in detail in Section 6.7.

Recommendations

Based on the evidence from global and Indian research, the following measures are recommended to protect the youth from tobacco:

1. A comprehensive tobacco control programme (including awareness and well-informed youth activism) is needed to reduce and restrict the youth from tobacco use.
2. A comprehensive ban on tobacco advertising (direct and indirect) is essential to prevent the youth from associating smoking with their role models.
3. Raising the prices of tobacco products, through taxes, and increasing the sizes of the packages are the most effective ways of preventing the youth from initiating use, as they are highly price sensitive.
4. School-based programmes should adopt a comprehensive intervention approach and ensure that the modes of communication are suitable to the targeted group's characteristics.
5. The youth, especially school students, should be encouraged to get involved in anti-tobacco advocacy and discuss policy issues related to tobacco control. Schoolteachers and parents should also be involved in these initiatives.

7.7 COMMUNITY INTERVENTIONS: PROTECTING THE YOUTH FROM TOBACCO

KEY MESSAGES

- Based on current trends, some 30%–40% of the 2.3 billion children and teenagers in the world would become smokers in early adult life.
- The most susceptible time for initiation of tobacco use in India is during adolescence and early adulthood, i.e. in the age group of 15–24 years.
- Raising the prices of tobacco products through taxes, increasing the size of the packages and a comprehensive ban on tobacco advertising (direct and indirect) are effective means of preventing the youth from initiating use.
- Youth involved in anti-tobacco advocacy are more likely to avoid tobacco use.

7.8

Community Interventions: Smoke-free Public Places

There is now incontrovertible evidence that exposure to other people's smoke is dangerous to health.[137] The health consequences of second-hand smoke have already been discussed in Chapter 4. Exposure to second-hand smoke is an entirely preventable cause of the substantial morbidity and mortality associated with tobacco use.[138] A growing number of countries and states are now implementing restrictions on smoking in public places. The most obvious benefit of these restrictions is clearly to non-smokers, who are spared exposure to the health risks and nuisance of second-hand smoke. For such restrictions to work, there must be a general level of social support for them, and an awareness of the health consequences of exposure to second-hand smoke.[139]

Smoking bans and restrictions are policies and regulations that ban or limit the consumption of tobacco products in specific places. These include private business and employer policies, organizational regulations, and government laws and ordinances. Laws and ordinances can establish minimum standards to protect workers in private sector workplaces, as well as ban or restrict smoking in public areas and workplaces.[140]

Smoke-free workplaces not only protect non-smokers from the dangers of passive smoking but also encourage smokers to quit or reduce consumption. In one study, the combined effect of people stopping smoking and reducing consumption reduced the total cigarette consumption by 29%.[141]

The WHO's Framework Convention on Tobacco Control (FCTC) has identified the need for protection from exposure to tobacco smoke. It states that countries should recognize that scientific evidence has unequivocally established that exposure to tobacco smoke causes death, disease and disability (Article 8).[142]

Recently, the Government of India has ordered a ban on smoking in public places. Despite similar bans imposed earlier by several Indian State Governments, smoking is still prevalent in many public places.[143] Effective policies for smoke-free public places are required to guide implementation at various levels and ensure strict enforcement of the existing laws.[144] The tobacco industry has often challenged the rationale and efficacy of such bans. In this context, it would be useful to review the available evidence.

Global evidence

Several countries have successfully introduced smoke-free public places. Regulations restricting smoking in public places appear to have a considerable impact on teenage smoking behaviour. It affects the teenager's decision to become a smoker rather than on reducing the number of cigarettes smoked.[141] Smoking restrictions in the home and bans in public places allow a limited opportunity for smokers to smoke. Properly enforced school bans have been found to be associated with up to 11% reduction in the initiation of smoking.[145] Schools and colleges with no-smoking policies have been shown to have the lowest prevalence of tobacco consumption and their students smoke fewer cigarettes than others.[146–148] Banning smoking in workplaces is a simple and cost-effective way to encourage smokers to quit. Banning smoking in restaurants was found to have either a neutral or beneficial effect on business and may increase patronage by tourists who desire smoke-free restaurants.[137]

Laws for smoke-free places may also be associated with a rapid effect on morbidity resulting from heart disease. A law banning smoking in public- and workplaces in a localized community resulted in a sharp decrease in

hospital admissions for acute myocardial infarction. The significant decrease in admissions was from an average of 40 admissions during the same months in the years before the introduction and after withdrawal of the law, to a total of 24 admissions during the six months when the law was in effect.[149]

The US Task Force on Community Preventive Services evaluated the effectiveness of selected interventions. They strongly recommended smoking bans and restrictions on the basis that they reduce exposure to second-hand smoke when applied: (i) in a wide range of workplace settings and adult populations; (ii) at different levels of scale, from individual businesses to entire communities; and (iii) whether used alone or as part of a multicomponent community or workplace intervention.[139]

In addition to the evidence of effectiveness in reducing workplace exposure to second-hand smoke, several studies also observed a significant reduction in the daily consumption of cigarettes by workers who are subjected to a smoking ban or restriction at their workplaces.[139]

Community education provides information to parents, other occupants and visitors to the home that reducing or eliminating second-hand smoke protects non-smoking adults and children. Attempts must be made to motivate household members to modify smoking habits and reduce the exposure of non-smokers to indoor second-hand smoke by establishing home policies, and restricting or banning smoking if they cannot quit entirely.[139]

Enthusiastic endorsement by and active participation of the community are essential for smoking bans to succeed. The 'top–down' regulatory approach must be complemented by a 'bottom–up' community mobilization approach. The government and community must constantly act in concert to enable laws for making public places smoke free to be enacted and sucessfully implemented (Fig. 7.10).

Indian evidence

There are only a few documented examples in India of success in achieving smoke-free environments. A study among youth (in the age group of 13–15 years), in government and private schools in Uttar Pradesh, reported that many students (60.7%) were in favour of banning smoking in public places.[150] A study from Bihar revealed that in schools that have enforced a no-smoking policy, teachers smoked less compared to schools having no such policy.[151]

Another example is 'a tobacco-free town' in Kerala. The people from Koolimadu village in Kerala started an anti-smoking movement when a chain smoker, who was a resident of their village, died of cancer. The villagers had a typical example in front of them, so they were convinced about the ill effects of tobacco. Due to the enthusiastic response to the anti-tobacco movement, the district administration imposed a total ban on the use and sale of tobacco products and declared the area a tobacco-free zone. Some of the youth groups have been given the responsibility of monitoring the ban. Due to the success of the movement, the penalty of being excluded from village life for a day has, so far, not had to be imposed.[152]

Before the Government of India banned smoking in public places, a ban on smoking had existed in certain areas. The Indian Airlines was one of the first airlines to ban smoking on domestic flights. The airlines has now extended the ban even on its international flights.[153] Apart from these, the Indian railways banned smoking in all its service areas.[154] Some institutions such as the Lucknow University banned smoking on the campus.[149,154] Although several such bans have been introduced in India, there is a lack of data on their effectiveness.

For enforcement of the newly enacted legislation for tobacco control, there is a need to gather such evidence of the impact on both active and passive exposure to tobacco smoke. However, studies from other countries are sufficient to

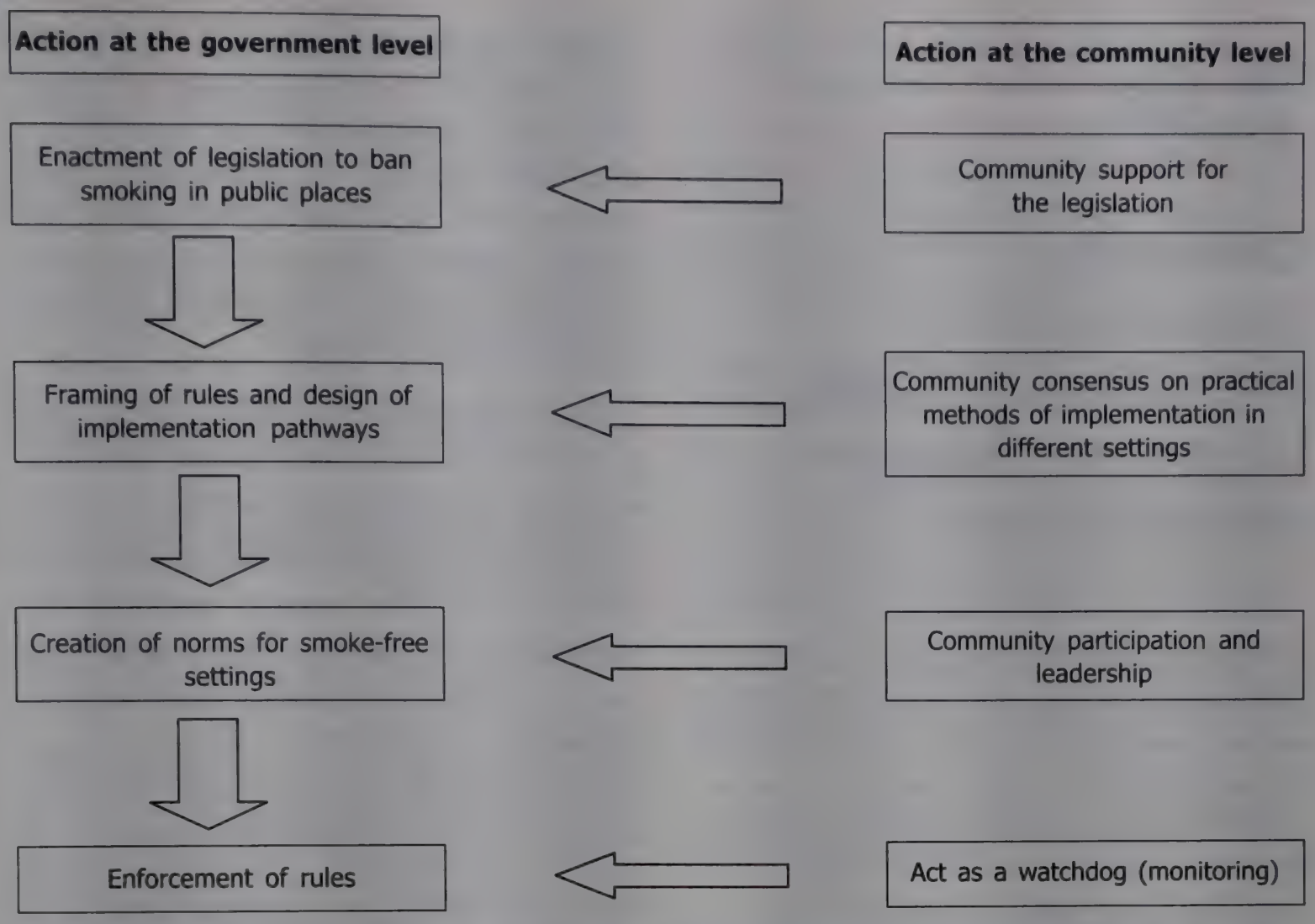


Fig. 7.10 Complementary roles of the government and community in making public places smoke free

show the effectiveness of such bans as a mechanism for tobacco control. In selecting and implementing interventions, there is a need to develop a comprehensive strategy to reduce exposure to second-hand smoke, reduce initiation and increase cessation. Improvements in each category will contribute to reductions in tobacco-related morbidity and death, and success in one area might contribute to improvements in other areas as well.[155]

7.8 COMMUNITY INTERVENTIONS: SMOKE-FREE PUBLIC PLACES

KEY MESSAGES

- Exposure to second-hand smoke is an entirely preventable cause of significant morbidity and mortality associated with tobacco use.
- Smoke-free workplaces not only protect non-smokers from the dangers of passive smoking, they also encourage smokers to quit or reduce consumption.
- For smoking bans to succeed, enthusiastic endorsement by and active participation of the community and an awareness of the health consequences of exposure to second-hand smoke are needed.
- The combined effect of people stopping smoking and reducing consumption reduces the total cigarette consumption by 29%.
- Regulations restricting smoking in public places have a considerable impact on teenage smoking behaviour. It affects the teenager's decision to become a smoker rather than the number of cigarettes smoked.

7.9

Community Interventions: Strengthening Health Literacy on Tobacco-related Matters

A tobacco control programme requires a multipronged strategy. Increasing the knowledge and awareness about its harmful effects is one of the ways of reducing tobacco use among people. Available global evidence on the impact of community health education interventions with regard to tobacco use is summarized here.

Global evidence

A well-designed public education campaign that is integrated with community- and school-based programmes, strong enforcement efforts and help for smokers who want to quit, can successfully counter marketing by the tobacco industry. Such integrated programmes have been demonstrated to lower smoking among young people by as much as 40%.[156]

A 15-year follow-up study, as part of the North Karelia Youth Project, showed that the reduction in tobacco use as a result of a mass media intervention combined with a school- and community-based education programme, lasts over time. In this study, students were taught about social pressures to smoke exerted by peers, adults and the mass media, and were trained by demonstration and role play to deal with them. The short- and long-term effects of smoking were also discussed. The mean lifetime cigarette consump-tion was 22% lower among subjects who had been in the programme than among control subjects.[157]

A study done in Minnesota found that a five-year intervention involving a media campaign, community programmes and school-based instruction resulted in significantly lower smoking rates. At the end of high school, just 14.6% of students in the intervention community were weekly smokers, compared to 24.1% of those in the control community.[158]

A study conducted in 1997 found that, in terms of cost per years of life gained, education campaigns through the mass media were among the most cost-effective methods to prevent or reduce tobacco use.[159]

An effective model for community-based programmes is the American Stop Smoking Intervention Study (ASSIST). The primary goal of this federally funded community-based programme was to reduce the prevalence of smoking and cigarette consumption among adults and youth in the 17 states participating in the study. By working with community groups, youth groups and adult organizations, the ASSIST programme has been able to reach diverse populations and raise public awareness regarding the need for tobacco control policies. Outreach programmes in health care settings and training programmes for physicians, nurses, dentists and dental hygienists also increase the potential public exposure to the dangers of tobacco and benefits of quitting smoking or avoiding starting altogether. Within three years of full funding of the project, per capita tobacco consumption in the ASSIST states was 7% lower than in non-ASSIST states. More than three-quarters of the intervention states showed some decrease in cigarette consumption despite decreases in the price of cigarettes.[160]

The state of Oregon in the USA has achieved impressive declines in per capita consumption after implementing a statewide tobacco control programme. Oregon's community activities include, among others, engaging young people to plan and conduct community tobacco prevention and education events and campaigns, working with judges and retailers to develop

education and diversion programmes, conducting a campaign on smoking in the home, and developing educational presentations and strengthening tobacco-use policies in schools, community and day-care centres.[161]

A 1995 study of California's anti-smoking programme found that anti-smoking media campaigns are an effective way of reducing cigarette consumption, and noted that higher funding levels produced more powerful results.[156]

A three-month multimedia anti-smoking campaign conducted in Norway (1977) is credited with reducing tobacco sales by 4% and encouraging an estimated 100,000 Norwegian smokers to attempt to stop smoking.[162]

A two-year anti-smoking television and radio campaign conducted in Greece between 1978 and 1980 is credited with reducing tobacco sales and increasing the number of smokers attempting to stop smoking. In the years before the campaign, the annual tobacco sales had increased at approximately 6% per year. During the campaign, tobacco sales were flat.[162]

Evaluations of two of the longer running anti-tobacco campaigns in California and Massachusetts suggest that the counter-advertising components of their programmes had contributed to an overall reduction in cigarette use and greater public awareness of the hazards of tobacco.[162]

School-based tobacco prevention programmes that identify the social influences which promote tobacco use among youth and teach skills to resist such influences can substantially reduce or delay adolescent smoking. Although long-term follow up of such programmes has indicated that the effect may dissipate over time, other studies have shown that the effectiveness of school-based tobacco prevention programmes is strengthened by booster sessions and communitywide programmes involving parents and community organizations and including school policies, the mass media and restrictions on youth access.[161]

Increasing excise taxes on cigarettes reduces tobacco consumption rates, but when the excise taxes support effective community, media and school programmes to prevent tobacco use, decreases in the per capita consumption will continue even if the industry lowers tobacco prices to pre-excise tax values.[163]

Goldman and Glantz reviewed research on the effectiveness of various anti-smoking messages. They concluded that 'aggressive' public education campaigns that focus on 'industry manipulation' (that is, on the goal of the tobacco industry to recruit young smokers and the tactics used to achieve this goal) and the negative effects of second-hand smoke are more likely to reduce cigarette consumption and denormalize smoking.[164]

Successful health interventions in India have been cited in Chapter 6.

Effective public education strategy

Available research and experience show that a public education campaign should include the following characteristics:[156,161]

- It must incorporate paid media, public relations, and special events and promotions in a coordinated effort that is integrated with school- and community-based programmes, as well as the other elements of a comprehensive tobacco reduction plan.
- It must be well funded so that the media component can achieve the reach necessary to be effective. This effort must be sustained over the long term.
- The mass media should be used for dissemination of policies related to tobacco control. These messages help to reinforce community campaigns.
- There should be no restrictions on the content of the messages, and the campaign must operate completely independent of tobacco industry input.

- It must be grounded in rigorous, state-of-the-art research on effectiveness.
- Young people must be involved in the planning and conduct of community tobacco prevention and education events and campaigns.
- Educational presentations should be developed and tobacco-use policies should be strengthened in schools, the community and day-care centres.
- Campaigns should be conducted on stopping smoking in the home.
- Tobacco advertising should be assessed locally (at state level) and plans should be developed to reduce tobacco sponsorship of public events.
- Smoking cessation programmes should be offered.

School-based interventions

These should include the following:[156,161]

- They should focus on information, attitudes, and skills to resist social and behavioural influences, as well as on peer norms, refusal skills, etc. among others.
- They should be socially and culturally acceptable to all communities. The lack of this has seen programmes failing to have the desired effect.[165]
- Tobacco-related information should be included in the curriculum.
- There should be booster sessions, where the knowledge once imparted can be re-emphasized.
- The information should be imparted by the teacher rather than an outside health professional.
- Teachers should be adequately and regularly trained by health professionals.
- Students should be included in the dissemination of information to the community.
- Cessation support should be given to students and teachers.
- Parents, the community and media should be involved in these interventions.
- The programme should be regularly assessed.

7.9 COMMUNITY INTERVENTIONS: STRENGTHENING HEALTH LITERACY ON TOBACCO-RELATED MATTERS

KEY MESSAGES

- Increasing the knowledge and awareness about the harmful effects of tobacco use among the people is one of the ways to reduce tobacco use.
- Health education leads to a long-lasting reduction in tobacco use, when it is imparted through the mass media and combined with a school- and community-based education programme.
- Education campaigns through the mass media are among the most cost-effective methods currently available to prevent or reduce tobacco use.
- School-based tobacco prevention programmes that identify the social influences which promote tobacco use among the youth and teach skills to resist such influences can significantly reduce or delay adolescent smoking, especially if strengthened by booster sessions and communitywide programmes involving parents and community organizations.
- Public education programmes should be well funded and based on rigorous research.
- The distinct cultural profiles of the targeted population groups should be kept in mind while designing programmes.

7.10

Benefiting from Models of Behaviour Change

Health, defined in its broadest conceptualization, is a dynamic state of complete physical, psychological, social and spiritual well-being wherein physiological, psychological, regard for societal roles and norms, and the transcendent purpose of existence are incorporated.[166] The maintenance of such a state is dependent on adopting behaviours that would not compromise health resulting in pain, disease or death; they should also foster social, psychological and spiritual well-being. Thus, the outcomes of high-risk behaviours such as experimenting with smoking, alcohol, drugs or unsafe sex, which may appear at first instance to be socially deviant behaviours, later develop into physical problems. Influencing behaviours to change them in a manner that reduces risks would thus seem to be a necessary step to promote health.

The Ottawa Charter for Health Promotion states that peace, shelter, education, food, income, equity and justice are fundamental conditions for health promotion, which would be fostered by healthy public policies, supportive environments, community action and personal skills. Health behaviour change thus needs to be seen in the larger comprehensive context of health promotion.[167]

Health behaviour change is a complex process and is guided by various empirical constructs and theories. The change needs to be made at the community, society (interpersonal) and individual (intrapersonal) levels. Contemporary health promotion includes not only educational activities but also advocacy, organizational change efforts, policy development, economic support, environmental change, and multi-method programmes highlighting the importance of approaching public health problems at multiple levels, and stressing the interaction and integration of factors within and across various levels. This approach has been referred to as an ecological perspective. Two key ideas—'multiple levels of influence' and 'reciprocal causation'—between individuals and their environments help direct the identification of personal and environmental leverage points for health promotion interventions.[168]

This section outlines (i) some of the theoretical constructs guiding health-related behaviours and the processes of changing behaviours, and community and environmental factors that influence behaviour; (ii) the two prominent approaches to the development of a framework in which the theories of behaviour change can be operational; and (iii) some of the relevant theories and examples of behaviour change interventions based on this theoretical framework.

Planning systems/frameworks

Once health communication planners identify a health problem, they need a planning system that can help identify the social science theories most appropriate for understanding the problem or situation. Two influential methods are: social marketing and Precede–Proceed. The use of planning systems such as social marketing and precede–proceed increases the probability of programme success by examining health and behaviour at multiple levels.

Social marketing

Social marketing is not a theory. It does not tell us how to change a person's behaviour. Rather, it is an approach to thinking about and structuring a social change programme to one that is consumer-driven. Within this framework, a number of social and behavioural theories can be drawn upon to develop a strategic course of action.

Kotler (1975) defines social marketing as 'the design, implementation, and control of programmes seeking to increase the acceptability of a social idea or practice in a target group(s).

It utilizes concepts of market segmentation, consumer research, idea configuration, communication, facilitation, incentives, and exchange theory to maximize target group response."[169] Andreasen (1995) defines social marketing as 'the application of commercial marketing technologies to the analysis, planning, execution, and evaluation of programmes designed to influence the voluntary behaviour of target audiences in order to improve their personal welfare and that of their society'.[170]

The common features of social marketing are:

1. The label is applied to causes judged by persons in positions of power and authority to be beneficial to both individuals and society.
2. Unlike commercial marketing, the agent of change does not profit financially from a campaign's success.
3. The ultimate goal is to change behaviours believed to place the individual at risk and not simply increase awareness or alter attitudes.
4. The optimal social marketing campaign is tailored to the unique perspective, needs and experiences of the target audience, hopefully with inputs from representative members of this group.
5. Social marketing strives to create conditions in the social structure, which facilitate the behavioural changes promoted.
6. Social marketing relies on the concepts of commercial marketing.

It has been said that 'there is poetic justice in using the very marketing concepts employed by such "disease peddlers" as the tobacco and fast food industries to combat their negative influences'.[171]

Social marketing practices are based on commercial marketing practices that make the consumer the central focus for planning and conducting a programme. One of the pathways to information campaigns based on social marketing is the 5P approach, which addresses the following components. [171]

Price: What the consumer must give up to receive the programme's benefits (these costs may be intangible, e.g. changes in beliefs or habits, or tangibles such as money, time or travel);

Product: What the programme is trying to change within the intended audience and what the audience stands to gain;

Promotion: How the exchange is communicated (e.g. appeals used);

Place: What channels the programme uses to reach the intended audience (e.g. mass media, community or interpersonal); and

Positioning: This is a psychological construct that involves the location of the product relative to other products and activities with which it competes. For instance, physical activity could be repositioned as a form of relaxation, not exercise.

Lessons learned from social marketing stress the importance of understanding the target audience and designing strategies based on their wants and needs rather than what good health practices direct them to do.

The Precede–Proceed framework

The Precede model is a framework for the process of systematic development and evaluation of health education programmes.[172] An underlying premise of this model is that health education is dependent on voluntary cooperation and participation of the client in a process that allows personal determination of behavioural practices; and that the degree of change in knowledge and health practice is directly related to the degree of active participation of the client. Therefore, in this model, appropriate health education is considered to be the intervention (treatment) for a properly diagnosed problem in a target population.

This model is multidimensional, founded in the

social/behavioural sciences, epidemiology, administration and education. As such, it recognizes that health and health behaviours have multiple causations, which must be evaluated to assure appropriate intervention. The comprehensive nature of 'Precede' allows for application in a variety of settings, such as school health education, patient education, community health education and direct patient care settings.[172]

'Proceed' was added to the framework in recognition of the emergence of and the need for health promotion interventions that go beyond traditional educational approaches to change unhealthy behaviours.[173] The administrative diagnosis is the final planning step to 'precede' implementation. From there, 'proceed' to promote the plan or policy, regulate the environment, and organize the resources and services, as required by the plan or policy. Figure 7.11 illustrates the Precede–Proceed model.

The Precede–Proceed model directs initial attention to outcomes rather than inputs. Hence, planners focus on planning from the outcome point of view. The model rests on two principles:

1. The 'principle of participation', which states that success in achieving change is enhanced by the active participation of members of the target audience in defining their high-priority problems and goals, and in developing and implementing solutions. This principle is derived from the community development root theories and the empowerment education model.
2. The important role of 'environmental factors', such as the media, industry, politics and social inequities, as determinants of health and health behaviours.

The Precede step of the model ends with the administrative and policy diagnosis and the Proceed step then begins with implementation and evaluation. This model has been applied, tested, studied, extended and verified in hundreds of published studies and thousands of unpublished projects in community, school,

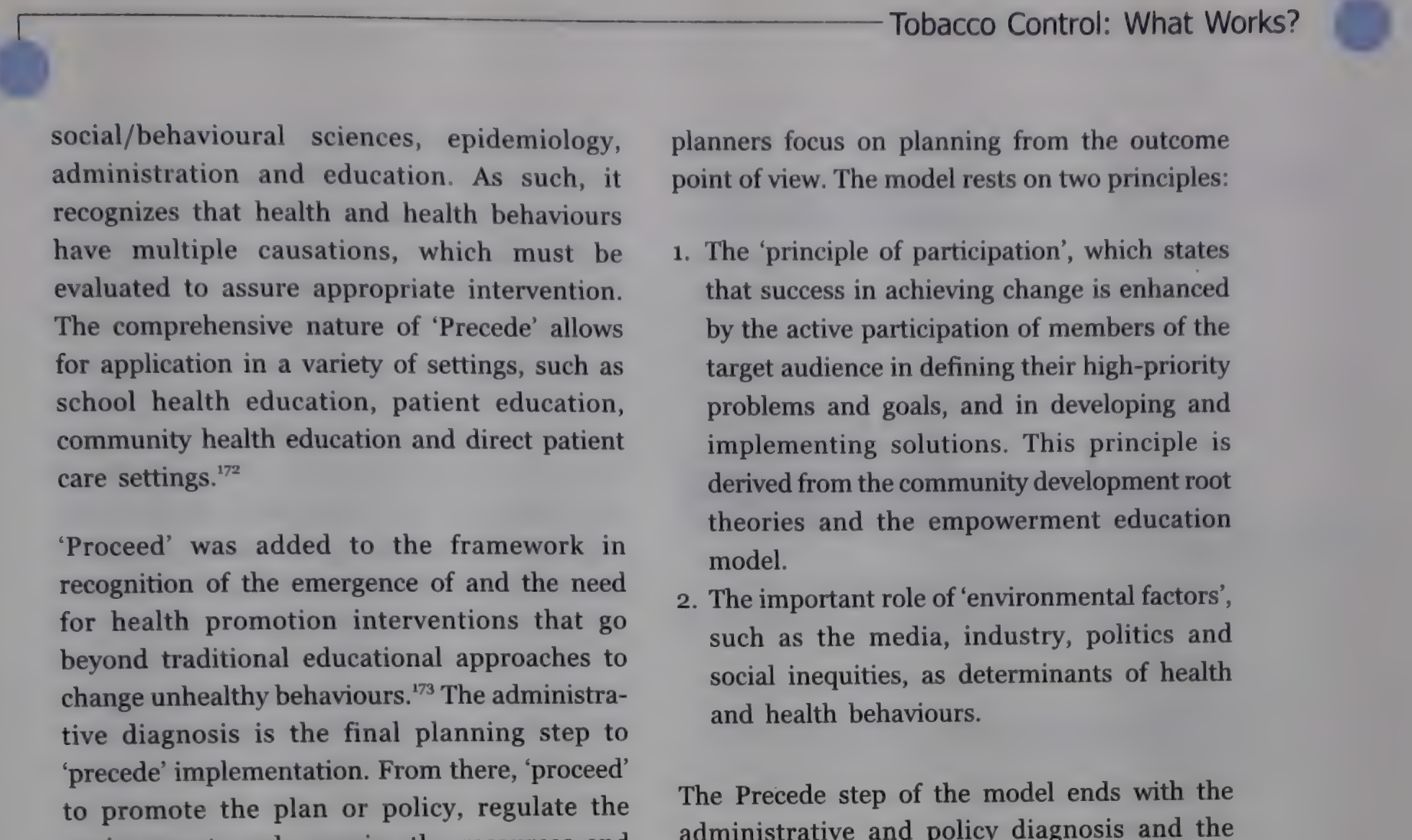


Fig. 7.11 The Precede–Proceed model

clinical and workplace settings over the past decade.[173,174] To provide technical guidance and assistance to those involved in the complex process of planning and implementing community-level cancer prevention and control interventions, the EMPOWER (Enabling Methods of Planning and Organizing Within Everyone's Reach) software was created.[173,174]

Models/theories of change

There are a number of influential models that have been proposed and evaluated. Some of these are as follows:[176]

I. The individual (intrapersonal) models are:

1. Health belief model
2. Transtheoretical model
3. Consumer information-processing model

II. The interpersonal models include:

1. Social learning or cognitive theory

III. Community/organizational network models include:

1. Organizational change theory
2. Community organization theory
3. Diffusion of innovations theory

I. Individual (intrapersonal) models

Health belief model

Developed around the 1950s by Hochbaum, Kegels and Rosenstock, the Health belief model (HBM) of influencing behaviours is useful in analysing asymptomatic yet considerably diseased persons (e.g. those with hypertension, diabetes, etc.). It is characterized by inaction regarding illness or non-compliance to intervention and remains one of the most widely recognized conceptual frameworks of health behaviour.[177]

The focus of this model was on increasing the use of preventive services, such as conducting a chest X-ray examination to screen for tuberculosis, and immunization such as influenza vaccines. It was assumed that people feared diseases and that health actions were motivated in relation to the degree of fear, i.e. perceived threat and the expected fear-reduction potential of actions, as long as the potential outweighed practical and psychological obstacles to taking action, i.e. net benefits.

Fear (threat) of the consequences of inaction (e.g. tobacco cessation) are weighed against the benefits of the action (remaining free of cancer or other tobacco-related diseases).

Four basic constructs representing the perceived threat and net benefits in the HBM are:

- Perceived susceptibility, i.e. one's opinion of the chances of acquiring a condition;
- Perceived severity, i.e. how serious a condition and its sequelae are;
- Perceived benefits, i.e. efficacy of the advised action to reduce the risk or seriousness of impact; and
- Perceived barriers, i.e. tangible and psychological costs of the advised action.

These are related to 'readiness to act' which, coupled with 'cues to act' (including strategies to activate readiness), will lead to a change in the behaviour (Fig. 7.12).

Rosenstock[178] added self-efficacy, or one's confidence in the ability to successfully perform an action to better fit the challenges of changing habitual unhealthy behaviours, such as being sedentary, smoking or overeating.

The application of HBM has been primarily in

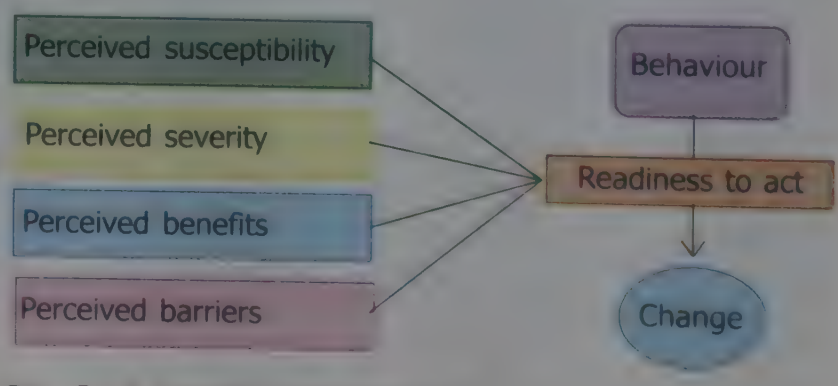


Fig. 7.12 Health belief model

explaining health-related behaviours but it could also be a useful framework for designing change strategies. The most promising application of the HBM is in helping to develop messages that can be delivered in the print or electronic media to persuade individuals to make healthy decisions.

In applying the HBM to a smoker, it would seem that the messages best suited for health education would include (i) I can have lung cancer (susceptible) based on the epidemiology of the disease, (ii) lung cancer can kill me (the severity is great), (iii) quitting can reduce the chances (how much; benefits), (iv) quitting will be associated with loss of contacts and perceived 'pleasure' of smoking (costs/barriers), and (v) a strategy to improve self-efficacy in the case of repeated relapses should be put in place.

The model is particularly useful when the condition evokes health motivation as well as social or economic motivation.

Transtheoretical stage of change model

The Transtheoretical stage of change model developed by Prochaska and DiClemente[179,180] evolved from work with smoking cessation and the treatment of drug and alcohol addiction, and has recently been applied to a variety of other health behaviours including substance use or lifestyle behaviour. The basic premise is that behaviour change is a 'process' and not an event, and that individuals are at varying levels of motivation, or 'readiness' to change. People at different points in the process of change can benefit from different interventions, matched to their stage at that time.

The four stages in this circular model—pre-contemplation, contemplation, action and maintenance—are depicted in Fig. 7.13. The subjects may enter and exit at any stage and go through the cycle in both directions. They often go from maintenance back to contemplation through relapse and onward to action. Sometimes subjects can go back to contemplation from action. It seems, however, that the stages may have a different meaning for different behaviours.

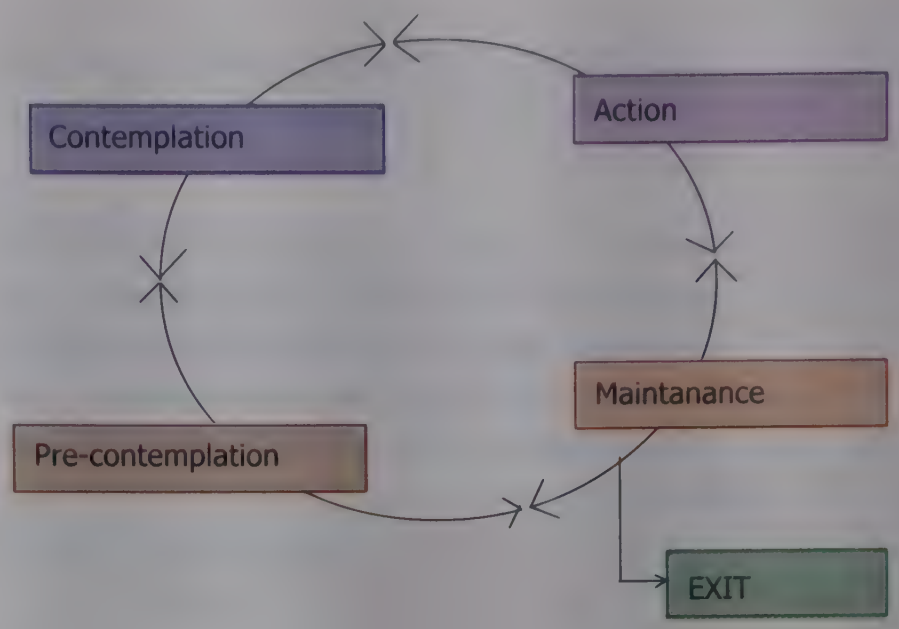


Fig. 7.13 Transtheoretical stage of change model

Readiness to change can be measured by questionnaires such as the 'Readiness to Change Questionnaire' developed specifically for drugs of abuse by Rollnick *et al.*[181] Specifically tailored programmes can be initiated by knowing the stage of change the individual is at.

The transtheoretical model is a very useful and influential model of behaviour change. It is used extensively in drug abuse treatment to ascertain the stage of change and use appropriate methods to change the stage. In relation to tobacco use, this model helps in understanding change in the individual as well as the community, and initiating stage-specific interventions.

Consumer information processing model

This model is based on the fact that information is important for people to solve problems. Information is needed for deciding virtually everything, e.g guidance in choosing treatment modalities or specific information to choose foods for therapeutic diets, etc. The human system, however, is limited by the ability to process information. Furthermore, information is necessary but not sufficient for encouraging healthful behaviours. In the present era of information explosion, information can increase or decrease a person's anxiety, depending on their information preferences, and how much and what kind of information they are given. Misconceptions can lead even motivated consumers to behave in risky ways.

The Information processing model is governed by the need for information and motivation to acquire the information.

Bettman's model (Fig. 7.14) depicts a cyclical process of information search, choice, use, learning and feedback for future decisions.[182] To be used in making decisions for change, the information must be available, appealing and novel.

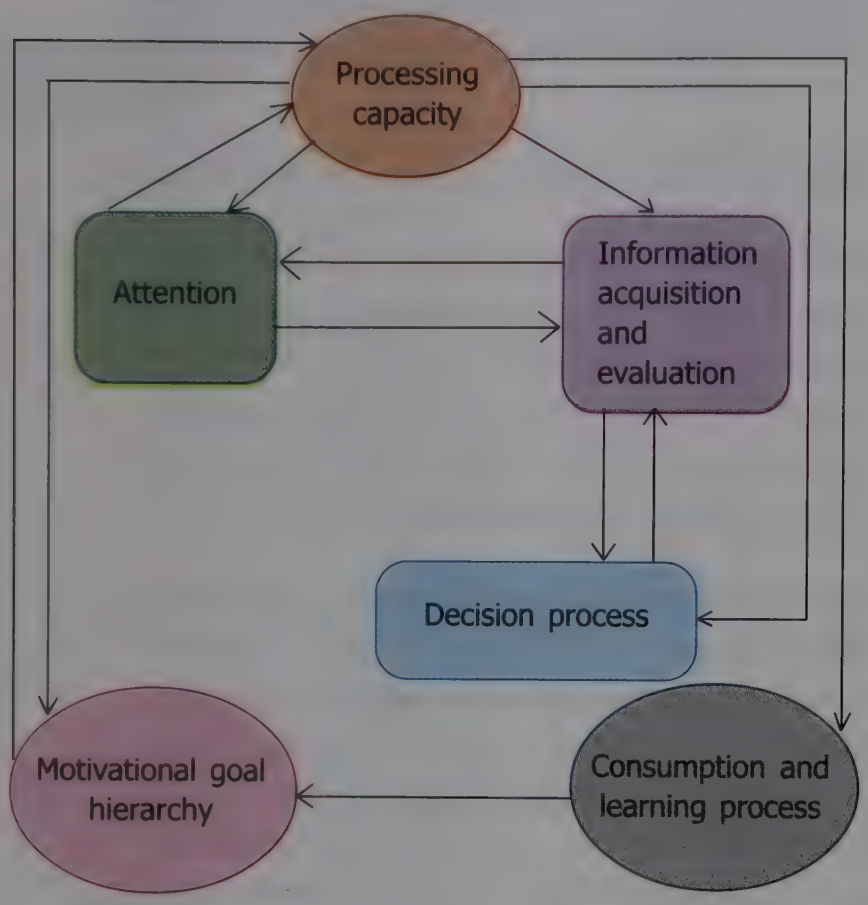


Fig. 7.14 Consumer information processing model of choice

II. Interpersonal theories of influencing behaviours

Social learning theory or social cognitive theory

In the 1970s, Bandura published a comprehensive framework for understanding human behaviour, based on a cognitive formulation, which he named the Social cognitive theory (SCT).[183] This was the first theory to incorporate the notion of modelling or vicarious learning as a form of social learning. Whereas strict behaviourism supports a direct and unidirectional pathway between the stimulus and response, representing human behaviour as a simple reaction to external stimuli, SCT asserts that there is a mediator (human cognition) between the stimulus and response, placing individual control over behavioural responses to stimuli. A basic premise of the Social learning theory (SLT) or SCT is that people learn not only through their own experiences, but also by observing the actions of others (vicarious learning) and the results of those actions. Bandura's work has stimulated an enormous amount of research on learning and behaviour, and has been useful in developing techniques for promoting behaviour change.

This theory has been used to study a wide range of health problems, from compliance to medical therapy, to alcohol abuse, to immunizations. One particularly fruitful area of investigation in which it has been employed is in understanding how children are socialized to accept the standards and values of their society. The theory is not without its limitations, prominent among which is the theory's comprehensiveness and complexity, which make it difficult to operationalize. Further, many applications of the theory focus on one or two constructs, such as self-efficacy, while ignoring the others.

This theory defines human behaviour as a triadic, dynamic and reciprocal interaction of personal factors, behaviour, and the environment, with the individual's behaviour being uniquely determined by each of these three factors. The key constructs include:

(i) Reciprocal determinism, meaning that behaviour and the environment are reciprocal systems and that the influence is in both directions. The environment shapes, maintains, and constrains behaviour with people in active interaction in the process, as they can create and change their environments.

(ii) Behavioural (symbolizing) capability, which maintains that symbols serve as the mechanism for thought and that, through the formation of symbols such as images (mental pictures) or words, humans are able to give meaning, form and contiguity to their experiences.

(iii) Expectations, which are the results that a person thinks will occur as a result of action.
(iv) Self-reflection or self-efficacy, which is the single most important aspect and a major determinant of self-regulation.

Observational (vicarious) learning allows one to develop an idea of how a new behaviour is formed without actually performing the behaviour oneself. It is often referred to as 'modelling', or learning about what to expect through the experiences of others. This means that people can gain a concrete understanding of the consequences of their actions by observing others and noting whether the modelled behaviours are desirable or not, and not indulging in the behaviour themselves. Observational learning is governed by four processes—attention span, retention processes, motor reproduction processes, and motivational processes.

Reinforcement is a term from classical behaviourism and is a response to a person's behaviour that affects whether or not the behaviour will be repeated. Positive reinforcements, often called 'rewards', increase the chances that the positive behaviour will be repeated. They are often useful as motivators for continued participation but not for sustaining long-term change.

III. Community/Organizational network theories

Organizational change theory

Organizations are complex and layered social systems, composed of resources, members, roles, exchanges and unique cultures. Thus, organizational change can best be promoted by working at multiple levels within the organization. Understanding organizational change is important in promoting health to help establish policies and environments that support healthy practices and create the capacity to solve new problems. While there are many theories of organizational behaviour, two are especially promising in public health interventions: stage theory and organizational development (OD) theory.

Stage theory

The stage theory is based on the idea that organizations pass through a series of steps or stages as they change. By recognizing those stages, strategies to promote change can be matched to various points in the process of change. An abbreviated version of the stage theory involves four stages:

— Problem definition (awareness)
— Initiation of action (adoption)
— Implementation of change
— Institutionalization of change.

Organizational theory

The OD theory grew out of the recognition that organizational structures and processes influence worker behaviour and motivation. The OD theory concerns the identification of problems that impede an organization's functioning, rather than the introduction of a specific type of change. Human relations and quality of work–life factors are often the targets of OD problem diagnosis, action planning, interventions and evaluation. A typical OD strategy involves process consultation, in which a specialist from outside the organization helps to identify problems and facilitates the planning of change strategies.

When combined, the stage and OD theories have the greatest potential to produce health-enhancing change in organizations. Such strategies can be used at various stages as they are warranted. Simultaneously, the stages signal the need to involve organization members and decision-makers at various points in the process. For example, these could become the guide to the development of a smoke-free work site programme.

Community organization theory

This theory emphasizes empowerment and active participation of communities that can better evaluate and solve health and social problems.

This theory emanates from the theory of social networks and support. Community organization is the process by which community groups are helped to identify common problems or goals, mobilize resources, and develop and implement strategies for reaching their goals. It has roots in several theoretical perspectives: the ecological perspective, social systems perspective, social networks and social support. It is also consistent with the SLT and can be successfully used along with SLT-based strategies. Although community organization does not use a single unified model, several key concepts are central to the various approaches. The process of empowerment is intended to stimulate problem-solving and activate community members.

Community competence is an approximate community-level equivalent of self-efficacy plus behavioural capability, which include the confidence and skills to solve problems effectively.

Social action approaches to community organizing go beyond the traditional notion of geographic and political boundaries. Communities of people who share common health problems have coalesced to attract attention and obtain power to address their needs including health services, anti-discrimination policies and more research funding.

Media advocacy is the strategic use of mass media as a resource for advancing a social or public policy initiative. The media is an important, and often essential, part of social action and advocacy campaigns because it focuses on public concerns and spurs public action. The core components of media advocacy are developing an understanding of how an issue relates to prevailing public opinions and values, and designing messages that frame the issues so as to maximize their impact, and attract powerful and broad public support.

Diffusion of innovations theory

This theory addresses how new ideas, products, and social practices spread within a society or from one society to another. Some of the most important characteristics of innovations are their relative advantage (is it better than what was there before?), compatibility (fit with the intended audience), complexity (ease of use), trialability (can it be tried out first?), observability (visibility of results).

Communication channels are a two-way process of flow of information and they mediate the impact of the media. The utility of innovation depends on the innovation (a new idea, product, practice or technology) as well as communication channels and social systems (networks with members, norms and social structures).

Illustrative studies

Some illustrative studies of health behaviour change in smoking and alcohol cessation described below are taken from the reported literature and are from settings in the western world. Available Indian studies are summarized at the end of this section. These studies illustrate the use of theoretical models in changing health behaviours in general, including tobacco use.

1. Lando *et al.*[184] reported the results of a general media campaign to compare the number of people who sent in interest cards and pledged to stop smoking versus those who sent in cards but did not pledge to stop smoking in a non-randomized trial with contemporaneous controls, and also compared outcomes from a previous study (historical controls). The campaign was tied to a contest and used telephone surveys for evaluation. They compared differences in quit rates between pledgers and non-pledgers and the results found that an extended enrolment period and intensive campaign increased enrolment and overall quit rates. Pledgers had higher self-reported abstinence rates. The study is, however, limited by the absence of a control group (a comparison community without the intervention), even though the historical controls may be a good indicator of change.
2. Popham[185] studied a group of people who quit smoking from among the entire population of

those exposed to California's anti-tobacco media campaign, to measure the exposure of those who quit in response to the campaign. This cross-sectional study determined that the media campaign had influenced change.

3. Prochaska[179,186] used a test of 40 questions to track subjects for 2 years to determine the progression through stages of change related to quitting smoking and outlined processes by which addictive behaviours are modified and the stages of change.
4. The World Health Organization sponsored a study of alcohol education in four countries. This pilot study of alcohol education in 8th grade students in 25 schools in Australia (6), Chile (3), Norway (14) and Swaziland (2) from 1985 to 1987 used random allocation in each country to control/teacher-led/peer-led programmes using social-led influences as the basis of intervention. Results indicated that students in the peer-led alcohol education programme reduced their drinking in all the four countries. Despite an increase in knowledge, teacher-led groups had same drinking status as that of controls.[187]
5. A Healthy Living Campaign was launched in Hong Kong in May 1998, as a demonstration of the stages of change model. The stages of change model were applied to measure changes.[188]
6. The Indian experience with behavioural intervention in tobacco use has been summarized in an annotated bibliography of tobacco-related research in India.[189] Some reports assessed behavioural variables such as initiation following exposure to surrogate advertisement, cessation and prevalence, and some studies included the incidence of oral lesions after behaviour change interventions. Most of the studies used health education as the intervention. Some used mouth self-examination as a tool for education and demonstrated its efficacy.

7.10 BENEFITING FROM MODELS OF BEHAVIOUR CHANGE

KEY MESSAGES

- Influencing behaviours to change them in a manner that reduces risks is a necessary step to promote health.
- A number of influential models of behaviour change have been proposed and evaluated. These models provide a framework to show how behaviours can be changed to achieve better health and social practices.
- The use of communication planning systems, such as social marketing and Precede–Proceed models, increases the probability of programme success by examining health-related behaviour at multiple levels.
- The Precede–Proceed model directs initial attention to outcomes rather than inputs and hence planners focus the planning process from the outcome point of view.
- The transtheoretical model of change provides the basis for stimulating and supporting individual efforts at tobacco cessation.
- Lessons learned from social marketing stress the importance of understanding the target audience and designing strategies based on their wants and needs rather than what good health practice directs them to do.

7.11

Individual Interventions: Promoting Tobacco Cessation

Why cessation?

Tobacco cessation is essential to reduce the mortality and morbidity related to tobacco use. It has been projected that by 2050, if the focus is only on prevention of initiation and not cessation, the result will be an additional 160 million deaths among smokers. The majority of tobacco-related deaths that can be prevented over the next 40 years will be among current smokers who can be persuaded to quit, according to projections by the WHO (Fig. 7.15).[190]

Tobacco cessation as a strategy is available in western societies and in Thailand among the South-East Asian countries. The smoking cessation guidelines developed in the UK have evaluated such programmes and have found that smoking cessation interventions are effective.[191,192] They are guaranteed to bring health gains for the population for a relatively modest expenditure, and in the long term they reduce smoking-related health care costs, thereby releasing resources for other needs.

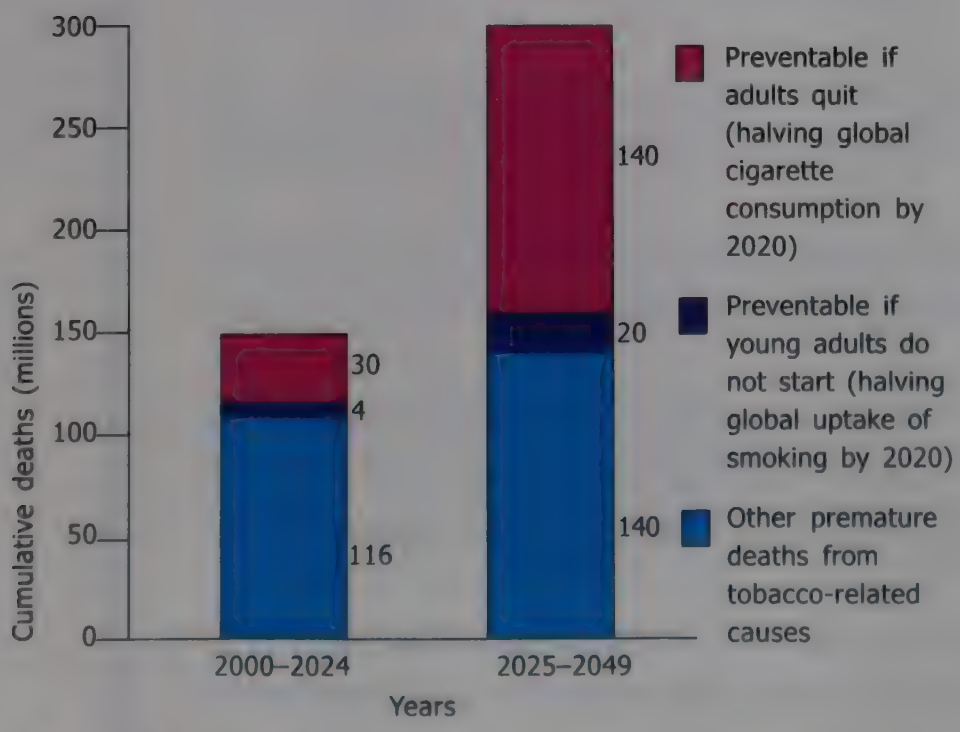


Fig. 7.15 Premature deaths from tobacco use, projections for 2000–2024 and 2025–2049

Source: World Health Report, 1999

Tobacco cessation interventions are clinically effective and cost-effective, relative to other commonly used disease prevention interventions and medical treatments. Cost-effectiveness analyses have shown that smoking cessation treatment compares favourably with routine medical interventions such as the treatment of hypertension or hypercholesterolaemia or preventive interventions such as Papanicolaou smears.[193]

A recent international review found the median societal cost of over 310 medical interventions to be £17,000 per life-year gained discounted at 5% (standard economic practice which weights immediately saved life-years as more 'valuable', and life-years saved in the future as less valuable).[194] Discounted results for smoking cessation interventions in the UK range from £212 to £873.[195] Based on these figures, even with conservative assumptions, smoking cessation interventions are considerably more cost-effective than many medical interventions.

A representative national sample of 893 smokers in the UK shows that most are disenchanted with smoking and claim that they would not smoke if they had their time again.[196] The widespread disaffection with smoking among smokers, combined with their tendency to be deluded about how easy and quick it will be to stop, justifies extra urgency in promoting chances to stop.[197]

Tobacco cessation will provide the most immediate benefits of tobacco control and maximize the advantage for a habituee who quits the habit. It is also established that a majority of smokers (as many as 70%) desire to quit, but only 30% actually try each year, and only 3%–5% actually succeed in quitting.[198]

Therapy

The first treatment approaches to smoking cessation that emerged in the 1950s and 1960s were based principally on behaviour modification. The 1970s saw a greater emphasis on cognitive treatments, which achieved greater momentum in the 1980s. The 1990s witnessed the introduction of several pharmacological strategies for nicotine cessation and the emergence of guidelines for tobacco cessation from various organizations.

There is a general consensus that behavioural methods and pharmacotherapy can contribute substantially to improved health by enabling cessation of tobacco use.[199] Standard treatment outcomes include measures such as 7-day point prevalence smoking abstinence at the end of the treatment trial with confirmation of surrogate measures of smoking such as concentrations of carbon monoxide in the breath and cotinine in the plasma, continuous abstinence from the target quit date (TQD) and prolonged abstinence after a grace period. Long-term abstinence is typically evaluated either at 6 or 12 months.

Tobacco (nicotine) dependence treatment involves a mix of pharmacological and non-pharmacological interventions. *Smoking cessation clinical practice guidelines* was originally published by the Agency for Healthcare Research and Quality (AHRQ) in 1999 and was updated in 2000 by AHRQ and a consortium of 7 government and non-profit organizations. The 2000 *Guidelines* urged clinicians to treat tobacco use disorder as a chronic disease similar in many respects to other diseases such as hypertension, diabetes and hyperlipidaemia, and to provide patients with appropriate advice and pharmacotherapy.[200]

A tobacco cessation intervention at an individual level is usually undertaken after a thorough assessment of the intensity of use. The Fagerstrom Test of Nicotine Dependence is a commonly used instrument for this purpose.[201] Depending on these variables, intervention programmes can be individually tailored. It has been estimated that less intensive interventions such as simple advice by a concerned physician can produce quit rates of 5%–10% per year in some individuals. A recent meta-analysis of 7 studies by the Clinical Practice Guideline Panel reported an abstinence rate of 8% when no cessation advice was given, compared with 10% with cessation advice.[202] In some more severely dependent individuals, pharmacological interventions may have to be used. When used alone, they can produce quit rates of about 25% but when combined with behavioural interventions the quit rates can go up to 35%.

Box 7.11 Effects of quitting tobacco smoking

Within 8 hours: Carbon monoxide level drops in the body.

Within 48 hours: Chances of having a heart attack start to decrease, sense of smell and taste begin to improve.

Within 72 hours: Bronchial tubes relax, making breathing easier and increasing lung capacity.

Within 2 weeks to 3 months: Circulation improves and lung functions increase by up to 30%.

Within 6 months: Coughing, sinus congestion, tiredness and shortness of breath improve.

Within 1 year: Risk of smoking-related heart attack is cut in half.

Within 3 to 4 years: Risk of heart attack is close to that of non-smokers.

Within 10 years: Risk of dying from lung cancer is cut in half.

Within 15 years: Risk of dying from a heart attack is equal to that of a person who has never smoked.

5'A's approach to tobacco cessation (modified from the United States National Cancer Institute's 4'A's strategy)[203]

- Ask every patient about tobacco use status. It is recommended that this become a part of the elicitation of vital signs.
- Assess the person's motivation or willingness to change. Prochaska and DiClemente offer a theoretical model of readiness to change.[204] Tobacco users in the pre-contemplation phase do not consider tobacco use a problem and are unwilling to address it. Those in the contemplation phase may be weighing the pros and cons but have not made any firm commitment to change. In the determination

(preparation) phase, the person is firmly committed to stop tobacco use. In the action phase, the person actually demonstrates commitment to change and if this is maintained steadily for a period of time, he or she is in the maintenance phase. The model is circular and the person may move from one phase to another. At any phase, the person may relapse and re-enter the cycle.

Assessment also needs to evaluate patient preferences for behavioural and pharmacological interventions. Measurement of nicotine and carbon monoxide levels can reflect smoking over the past few hours. Measurement of cotinine, a metabolite of nicotine, can reflect smoking in the past 7 days.[205]

- Advice to every user must be clear, strong and personalized. Tobacco users may be helped in making the transition from a non-committed phase to a phase of commitment by increasing their motivation to change. Strategies for motivation to change include listing the pros and cons of tobacco use, assessing the person's self-efficacy in being able to stop, information on tobacco-cessation strategies and identification of a relevant goal. As alcohol is a risk factor for tobacco relapse, advice to reduce the alcohol intake or abstain from alcohol is recommended.[206]
- Assist a person committed to change by reinforcing the person's decision, helping the person make a plan, including a strategy to manage withdrawal and triggers for relapse, exploring the possibility of adding pharmacotherapy to behavioural strategies, helping the person set a quit date, making necessary arrangements for the quit date (informing the family about the decision to quit, getting rid of all forms of tobacco and paraphernalia such as lighters or matchboxes, anticipating and preparing to handle withdrawal and craving) and identifying social supports within and outside the family to assist the person in his or her tobacco-cessation attempts. Both intra-treatment support (support provided by the physician or caregiver) and extra-treatment support (provided by family, friends, employer, etc.) appear to be critical to the success of a cessation attempt.

  Support within the treatment includes encouragement to quit tobacco use, communicating care and concern, encouraging the patient to talk about the quitting process, which includes reasons for quitting, concerns and worries about quitting, and successes as well as difficulties encountered while quitting. Assisting can be done as part of a brief or intensive intervention programme.
- Arrange a specific follow up in the couple of weeks following the decision to quit to reinforce the person's goal, reinforce support, and intervene in case the person slips and is unable to achieve the desired goal. Most studies suggest that frequent, brief follow up, including telephone calls to provide support to the user, increase quit rates.[211,212]

Box 7.12 Common questions about tobacco cessation

Abrupt versus gradual cessation: Most patients use and most clinicians recommend abrupt cessation, but most scientific data suggest no difference, so the clinician may be guided by the patient's preferences.[207,208]

Fears of weight gain following cessation: On an average, the weight gain is 2–3 kg. A large majority of smokers gain weight over the first few months post-cessation, but many lose much or all of this weight later.[209] Physical exercise would prevent weight gain and is part of a 'healthy living' pattern that the smoker should be encouraged to adopt. Indeed, exercise has been shown to improve tobacco quit rates.[210]

Interventions to promote tobacco cessation

Studies on the efficacy of interventions to promote and maintain tobacco cessation have mostly been conducted on smoking forms of tobacco, especially cigarettes. This is because much of this research has been conducted in developed countries. The results of several studies on different types of interventions are summarized in Table 7.11.

Psychosocial interventions

The initial goal of psychosocial intervention is to increase motivation, initiate a quit attempt and help the patient quit for a short period. The main goal of psychosocial intervention in tobacco cessation is sustained abstinence, change of lifestyle and improved quality of life.

There is a strong dose–response relationship between the intensity of counselling for tobacco dependence and its effectiveness. Treatments involving person-to-person interactions (via individual, group or proactive telephone counselling) are consistently effective, and their effectiveness increases with the intensity of

Table 7.11 Incremental effects of smoking cesation interventions on abstinence for six months or longer[213]

Intervention	Target population	Effect size[a] (%)	95% confidence interval[b]
Brief opportunistic advice from a physician to stop	Smokers attending GP surgeries or outpatient clinics	2	1%–3%
Face-to-face intensive behavioural support from a specialist[c]	Moderate to heavy smokers seeking help with stopping	7	3%–10%
Face-to-face intensive behavioural support from a specialist	Pregnant smokers	7	5%–9%
Face-to-face intensive behavioural support from a specialist[d]	Smokers admitted to hospital	4	0%–8%
Proactive telephone counselling[e]	Smokers wanting help with stopping but not receiving face-to-face support	2	1%–4%
Written self-help materials	Smokers seeking help and not receiving other support	1	0%–2%
Nicotine gum	Moderate to heavy smokers receiving limited behavioural support[f]	5	4%–6%
Nicotine gum	Moderate to heavy smokers receiving intensive behavioural support	8	6%–10%
Nicotine transdermal patch	Moderate to heavy smokers receiving limited behavioural support	5	4%–7%
Nicotine transdermal patch	Moderate to heavy smokers receiving intensive behavioural support	6	5%–8%
Nicotine nasal spray	Moderate to heavy smokers receiving intensive behavioural support	12	7%–17%
Nicotine inhaler	Moderate to heavy smokers receiving intensive behavioural support	8	4%–12%
Nicotine sublingual tablet	Moderate to heavy smokers receiving intensive behavioural support	8	1%–14%
Bupropion (3000 mg/day sustained release)	Moderate to heavy smokers receiving intensive behavioural support	9	5%–14%
Intensive behavioural support plus NRT or bupropion[g]	Moderate to heavy smokers seeking help from a smokers' clinic	13–19	–

[a] Difference in >6-month abstinence rate between intervention and control/placebo in the studies reported; data from Cochrane meta-analyses unless otherwise stated

[b] The range within which one can be 95% confident that the true underlying value lies

[c] Efficacy figures based on subset of studies from the general population with biochemical verification

[d] No Cochrane review available, data from United States Department of Health and Human Services (USDHHS) meta-analysis

[e] No Cochrane review available, data from USDHHS meta-analysis

[f] The term 'limited behavioural support' refers to brief sessions required primarily for collecting data. Following the Cochrane definition, 'intensive' behavioural support was defined as an initial session of more than 30 minutes, or an initial session of less than 30 minutes plus more than two subsequent visits.

[g] Expected effect combining effect of medication with effect of behavioural support

Complete information available from URL: www.thoraxjnl.com

treatment (e.g. minutes of interaction). Three types of counselling and behavioural therapies have been found to be especially effective, and are recommended for all patients who are attempting tobacco cessation:

- Providing practical counselling (problem-solving/skills training)
- Providing social support as part of the treatment (intra-treatment social support)
- Providing help in securing social support outside of treatment (extra-treatment social support).[198]

Evidence related to specific psychological therapies are summarized in Table 7.12.

Relapse prevention

Attempts to prevent and manage relapse are based on a common understanding of the concept and mechanisms of relapse and lapse. Relapse may be defined as resumption of frequent, perhaps uncontrolled tobacco use after a period of non-use and lapse is considered a single incident of tobacco use. A lapse (slip) may not result in a relapse, depending on how the patient responds to the initial incident. There may be various reasons for relapse such as withdrawal symptoms, high-risk situations such as stress, interpersonal conflict, social pressure and environmental cues.

The first specific measure in handling a relapse is to clearly delineate the contexts/causes for relapse in that particular case, keeping in view the common situations and reasons for relapse. Patients are enabled to anticipate a large number of situations or processes that are likely to lead to urges to smoke/chew tobacco or to prompt a slip. The second step is to reformulate the treatment plan by which the patients are helped in planning and developing strategies to cope with these situations. The patient may be taught coping skills for 'high-risk' situations, communication skills training, relaxation techniques, distraction techniques, assertive training, depending on the pertinent factors responsible for relapse.

Self-help approaches

The two basic modalities of psychosocial interventions, i.e. brief and extended, have the commonality of being therapist mediated. A third and novel approach in psychosocial intervention is self-help approaches. These

Table 7.12 Specific psychological therapies

Technique	Evidence
Skills training/relapse prevention helps patients identify high-risk situations or processes that are likely to lead to an urge to use tobacco. Behavioural coping (learning to anticipate and avoid temptation, refusal skills, assertiveness and time management) and cognitive skills (challenging thought processes and strategies to reduce negative moods), accomplishing lifestyle changes that reduce stress and improve the quality of life and pleasure are the techniques used.	Recent meta-analytical studies suggest increased cessation rates.[192,214] Individual counselling is more effective than control. The odds ratio for successful smoking cessation was 1.62 (95% confidence interval: 1.35–1.94). Failed to detect a greater effect of intensive counselling compared to brief counselling (odds ratio 0.98: 95% confidence interval: 0.61–1.56) [215]
Aversive therapy: The rationale is to make tobacco use more aversive and less reinforcing by inducing mild symptoms of tobacco intoxication (used in smokers).	Shown to be effective, but not used by most therapists because of health and compliance concerns[216]
Contingency management (reward for not smoking, loss of reward for smoking)	Lacks sufficient evidence[192,217]
Cue exposure (repeated exposure of the patient to real or imaginary situations that evoke the urge to smoke)	Lacks sufficient evidence[192,217]
Nicotine fading (gradual reduction in the nicotine yield of the cigarette)	Lacks sufficient evidence[192,217]
Relaxation and physiological feedback	Lacks sufficient evidence [192,217]

include self-help material and self-help groups.

Self-help material: Written manuals are the most common forms of self-help material, although computer and video versions are also available. The major goals of self-help materials are to increase motivation and impart cessation. Self-help materials are effective in patients who are less nicotine dependent and more motivated. However, without additional contact or support, the impact of these materials is debatable and their use is advised as part of a behavioural therapy programme.[216,218]

Self-help groups: These mostly operate on the principles laid down by the world's largest self-help group, i.e. the Alcoholics Anonymous (AA). Several organizations such as Nicotine Anonymous have outlined how to apply the 12-step model to smoking. The aim is to have the smoker accept that he or she is powerless to stop smoking and work through 12 goals (or steps) that help break denial. Though there are no scientific tests for the 12-step programme for smoking cessation, it can be a useful adjunct to other psychosocial treatments.

Other non-pharmacological therapies

Hypnotherapy has been used for tobacco cessation but reports on its efficacy are conflicting, mainly because of methodological issues. It is still under evaluation as a promising therapy.[216]

High-intensity exercise regimens seem to be helpful in tobacco cessation by increasing self-esteem, relieving stress, managing weight gain and improving health. Recent findings on high-intensity exercise regimens suggest positive outcomes, but these still need to be evaluated for sufficient evidence.[210,219,220]

Pharmacotherapy

Current recommended pharmacotherapy for nicotine cessation consists of nicotine replacement therapy (NRT) and the use of the atypical antidepressant bupropion. These treatments emerged primarily for smoking cessation, but are now also being used for smokeless tobacco cessation.

Extensive randomized, double-blind, placebo-controlled clinical trials have established the efficacy and safety of NRTs and bupropion in the treatment of nicotine dependence, by increasing the quit rates by approximately 1.5–2-fold, irrespective of the setting.[221] The effectiveness of NRTs appears to be largely independent of the intensity of additional support provided to the smoker. Since all the trials of NRT reported so far have included at least some form of brief advice to the smoker, this represents the minimum which should be offered to ensure its effectiveness. Provision of more intense levels of support, although beneficial in facilitating the likelihood of quitting, is not essential to the success of NRT. There is promising evidence that bupropion may be more effective than NRT (either alone or in combination).

Nicotine replacement therapies

These are the most commonly used agents for quitting tobacco use. Products include nicotine gums, nicotine patches, nicotine nasal spray, nicotine inhalers and nicotine lozenges. Details of the dosages are summarized in Table 7.13. Nicotine gum is an over-the-counter replacement product and is available in a strength of 2 mg. The dose of gum depends upon the smoking intensity of the quitter. It is associated with a quit rate of about 23% as against 13% with placebo. In one randomized controlled trial, compliance was highest for the patch (82%) compared with the gum (38%), the spray (15%) and the inhaler (11%).[222] Nicotine patches and nicotine-containing chewing gums are not available as licenced NRT products in India.

One important guideline is to advise the patient to set the TQD before starting NRT. All NRT formulations have demonstrated superior efficacy in placebo-controlled clinical trials, with an odds ratio of 1.5–2.5 at both end-of-trial and long-term (6- and 12-month) assessments.[223,224]

Non-nicotine pharmacotherapy

Bupropion, the phenylaminoketone atypical antidepressant in the sustained-release form, was the first agent used in non-nicotine pharmacotherapy for tobacco cessation, and is now considered a first-line treatment for nicotine dependence. A meta-analysis of two placebo trials of bupropion demonstrated its superiority over placebo, with the estimated odds ratio of 2.1 (95% confidence interval).[202] Nortriptyline, a tricyclic antidepressant, has also been used and found to have similar quit rates as bupropion.

Clonidine, an alpha-2 adrenoceptor antagonist used in opiate and alcohol withdrawal, has also been shown to diminish some of the tobacco withdrawal symptoms. The pooled odds ratio for success in six trials with oral or transdermal clonidine versus placebo was 1.89 (95% confidence interval: 1.30–2.74).[225]

Other pharmacological agents used in nicotine cessation programmes include doxepin, the reversible monoamine oxidase (MAO)-A inhibitor moclobemide, the selective MAO-B inhibitor and indirect dopamine (DA) agonist selegeline hydrochloride, 5-HT selective reuptake inhibitors (specific serotonin reuptake inhibitors [SSRIs]) such as fluoxetine and the 5- HT-1a partial agonist buspirone.[226] The opiate antagonist naltrexone has also been used in some settings. Mecamylamine, a nicotine receptor antagonist, has been tried as an aid to assist smoking cessation, with early trials not showing a positive outcome when used alone, and later studies suggesting a positive outcome on combining it with NRT.[226] Lobeline, a non-tobacco drug that shares tolerance with nicotine on several measures, is available in over-the-counter anti-smoking medications in the US.[226] The definite role of these drugs in tobacco cessation treatments remains to be established.

The future holds other promising agents such as the gamma aminobutyric acid (GABA)-B agonist baclofen, cannabinoid receptor antagonists, glutamate receptor agonists, as well as vaccines. Vaccines, which involve the injection of a nicotine-like hapten conjugated to a strong immunogen, and lead to the production of anti-nicotine antibodies and sequestration of intravascular nicotine after cigarette smoking, are being developed and phase I studies are in progress. These novel treatments may be effective options in both initiating smoking abstinence and preventing relapse.[226]

Table 7.13 Pharmacological agents used for tobacco cessation

Agent	Route and dose	Duration	Side-effects	Precautions
Nicotine gum	Buccal route 2 to 4 mg pieces up to 10 times/day	12–16 weeks	Sore mouth	NRT to be used only after TQD
Nicotine patch	Transdermal route 7–22 mg/day	6–12 weeks	Local skin irritation	NRT to be used only after TQD
Nicotine nasal spray	Intranasally 16–32 mg/day	12–24 weeks	Local irritation	NRT to be used only after TQD
Nicotine inhaler	Intranasal or buccal 6–16 mg/day	Up to 24 weeks	Local irritation	NRT to be used only after TQD
Bupropion SR (sustained release)	150 mg o.d. X 3 days, increased to b.d., to begin 1–2 weeks before TQD	7–12 weeks maintaining up to 24 weeks	Insomnia, dry mouth, jitteriness	Contraindications: seizures, eating disorders

NRT: nicotine replacement therapy; TQD: target quit date

Source: Adapted from APA 2004; George and O'Malley 2004[216,226]

Strategies for effective tobacco control

Various guidelines all emphasize the need for making tobacco cessation services widely accessible to tobacco users.[191,194,199,227,228] This has several implications for a developing country such as India, where identification rates in clinical settings are low, a negligibly small number of health professionals have received training in these areas, availability and affordability of pharmacotherapy are practical constraints, a sizeable clientele is likely to be rural and, as seen from the experience of the tobacco cessation clinics (TCCs), the acceptance of pharmacotherapy is low. Several urgent steps need to be taken to make tobacco cessation facilities widely available.

Since the problem of tobacco in India is complex, in view of the varied nature of tobacco use, the government has realized that the control of tobacco can effectively be carried out only with a multisectoral approach, involving the various concerned sectors. Strategies for different sectors are being identified for effective tobacco control in the community, which would help in planning the national strategy for tobacco control in India.

Tobacco cessation cannot succeed as an isolated programme. It has to be designed and implemented as part of a comprehensive tobacco control strategy. This must include the preventive, curative and rehabilitative aspects of care. A bold step in this regard is the setting up of TCC but this endeavour must be extended. Capacity-building strategies for the identification and management of tobacco use and disorders related to its use must be made available through the existing health care facilities. There must be a provision for adequate therapeutic interventions, including the availability of replacement therapies for tobacco dependence.

Health care delivery systems

Training medical and other health professionals in tobacco cessation is critical to expand tobacco cessation activities in the country. In the medical sector, from general practitioners to specialists in different areas, training must address the attitudes to tobacco use, impart the knowledge and skills required for intervention, address the therapeutic nihilism that often surrounds tobacco cessation interventions and provide updates on emerging approaches to tobacco cessation.

Training of health professionals is an essential part of a cost-effective, evidence-based strategy for smoking cessation and treatment of tobacco dependence because of their interaction with smokers and other tobacco consumers as care providers and their role as health communicators in societies.[229] However, health care providers and professionals often lack sufficient motivation to undertake smoking cessation as a means of prevention. Misinformation about effective interventions, inadequate training in all health care settings, lack of support for routine assessment, and lack of resources and government funding are a few of the many factors that impede health care professionals from taking action.

In addition, professional organizations, such as medical organizations and those involving pharmacists, nurses, midwives and dentists, among others, should become involved in the training process at the international, regional, national and local levels. This could include organizing lectures at workshops and publishing articles on smoking cessation in bulletins and journals. They could thus provide basic interventions as well as background materials on smoking cessation relevant to the specific professional groups.

Interventions in diverse settings and for diverse populations

The workplace has a captive population where both tobacco prevention and cessation activities can be undertaken, and better monitoring of the effects of intervention is possible. Tobacco is one of the 'psychosocial' problems (along with stress, alcohol and drugs, violence and HIV/

AIDS) that is comprehensively addressed by the International Labour Organization in the SOLVE (stress, tobacco, alcohol/drugs, violence and HIV/AIDS prevention) programme for workplaces.[230]

More often than not, tobacco interventions address mainly men who are smokers. It is important that cessation activities also address chewers, both men and women, as well as women smokers. Other groups such as the elderly, adolescents and patients with psychiatric illness may require special interventions.

Youth tobacco cessation collaboratives for children and teenagers begin with intervention through education. Counselling centres have become important prerequisites in schools and colleges. Education regarding tobacco awareness and cessation should be imparted first to educators for effective prevention of tobacco initiation. School and college science exhibitions today impart knowledge on tobacco along with subjects such as cancer, for the benefit of both the thousands of visitors and the students themselves.

An important strategy for tobacco prevention is an initiative among the students, such as the Students Working Against Tobacco (SWAT) in the US. Student leaders in this group, particularly ex-smokers, are perfect guides for teenagers addicted to tobacco.

Community

Tobacco cessation at the community level is mandatory. Community participation should be fortified through the frequency of public involvement through meetings. Leaders should not only be popular, committed and convincing, but should be able to harness the might of the community members effectively. A counselling centre in every slum is an achievable goal.[231]

Community awareness and education should be enhanced through the role of public and private agencies, NGOs, the National Service Scheme and National Cadet Corps, and spiritual leaders. As in any other important issue, the cessation strategy can be implemented in a cross-section of society through a variety of sources. NGOs are a committed force and empowering them for tobacco cessation, even in a limited way, has worked wonders. With the expanding network of NGOs at every district level, the cessation movement should be able to take giant strides.

Quit lines and websites

A toll-free telephone number forms a single access point to the national network of quit lines. Of equal importance in tobacco control is the establishment of quit lines at the national-, state- and local levels. In the US, counsellors have proved more effective than self-help material.

An online guide to tobacco cessation is available through websites such as www.smokefree.gov. Instant messaging with the cessation expert is made available. Cessation guides that can be downloaded should also be of great use to the tobacco user. These websites and guides have been shown to increase the cessation rates by 40%. Similar use of information technology is likely to help at least some sections of tobacco users in India.

Expanding the available approaches

Although nicotine patches were introduced in different parts of India, the exorbitant costs limited the acceptance of this form of treatment. Some pharmaceutical companies introduced bupropion, but withdrew the product because of low demand.

Considerable progress has been made in the provision of effective treatments, both behavioural and pharmacological, for tobacco dependence. It is critically important that a wide range of interventions be used both in general to support tobacco cessation and specifically to support those who wish to quit tobacco use even when medication is not available.[231] Social support for quitting should be possible in all countries, even those with extremely limited

resources.[231] In the Indian context, research on the role of indigenous systems such as *yoga* and *ayurveda* as cessation therapies or facilitators should be systematically designed and conducted.

According to the United States *Clinical Practice Guidelines*, both social support as part of treatment (intra-treatment social support) and help in securing social support outside of treatment (extra-treatment social support) are especially effective in increasing the rate of quitting. All countries have laypersons who can provide informal social support for quitting and who can be trained to conduct more formal interventions.

In the background of diverse clinical recommendations advocating the combined use of behavioural counselling and pharmacotherapy for tobacco cessation, it is critical to develop systematic, large-scale studies in the Indian context to determine the additive effect of pharmacotherapy. Alternative ways of using nicotine substitutes, e.g. a gum to handle craving instead of as a complete nicotine replacement strategy, need to be evaluated.

There would appear to be special challenges in countries where there are relatively few ex-smokers and where tobacco prevalence rates are high among health professionals.[231] Ex-smokers can serve as role models in encouraging quitting and can provide social support to individuals who are attempting to quit. They may also reflect an environment in which quitting is a greater priority. Attempts must be made to involve such advocates in cessation programmes in India.

The major challenge for India in the twenty-first century is to make early tobacco use cessation treatment available to all tobacco users, evolve treatments that are culturally relevant and appropriately tailored to individuals and the population, and view tobacco cessation in the wider picture of prevention activities.

7.11 INDIVIDUAL INTERVENTIONS: PROMOTING TOBACCO CESSATION

KEY MESSAGES

- Tobacco use cessation use is an essential component for reducing the mortality and morbidity related to tobacco use, as the lack of it may lead to an additional 160 million global deaths among smokers by 2050.
- Tobacco use cessation provides the most immediate benefits of tobacco control and maximizes the advantages for a tobacco user who quits the habit.
- Tobacco cessation services should be made widely accessible to tobacco users and should cater to the wide range of products used in India.
- Capacity-building strategies for the identification and management of tobacco use and disorders related to its use must strengthen the services available through the existing health care facilities.
- Involvement of the community is an essential component of a tobacco cessation programme.

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8

Tobacco Control: What is Needed?

Resourcing, implementation and evaluation

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All the measures identified in Chapter 7 will be successful only if the systems for their delivery are strengthened. The integration of interventions for tobacco control into other health care programmes as well as other developmental programmes is essential to provide the widest outreach and the largest impact. At the same time, capacity for tobacco control needs to be built both at the level of the government (for policy, legislation, regulation and enforcement) and at the level of civil society (for advocacy, community mobilization, countering the tobacco industry and networking with potential partners).

These efforts would require mobilization of financial and human resources to support the broad array of activities aimed at tobacco control. This poses great challenges in a developing country such as India where the competition for scarce resources is very high, both within the health sector and across the development health sectors. Innovative means would need to be adopted to mobilize the funds required for tobacco control, including methods to extract funds from the tobacco industry through a dedicated tax. Enlisting human resources for delivery of the tobacco control programme and enhancing their capacity to do so are needs which require urgent attention and action by multiple stakeholders.

The success of the National Programme for Tobacco Control would also hinge on the smooth functioning of the coordination mechanisms that interconnect the various stakeholders and link together the several programme activities. Such coordination would be required among governmental agencies, amid civil society groups and to foster public–private partnerships.

The programmes, when implemented, also need to be systematically evaluated to ascertain performance levels in relation to predefined objectives. The evaluation process should be based on process, product and outcome indicators and be specifically designed for each programme component. The results of the evaluation need to be widely disseminated, not only to place the performance record of the programme under scrutiny in the public domain, but also to obtain feedback for taking needed corrective measures.

This chapter addresses these challenges from the Indian perspective, while also drawing upon international experience, where appropriate.

8.1

Resourcing: Financial Resource Mobilization and Human Resource Development

The agenda of tobacco control is as vast as it is urgent. It requires multisectoral action to prevent the primary uptake of tobacco, promote tobacco cessation, regulate tobacco products, protect non-smokers from second-hand smoke, and encourage a shift to alternative crops and industries. Each of these components of a comprehensive tobacco control strategy requires action at multiple levels, utilizing diverse implementation pathways and connecting with a wide variety of stakeholders.

The financial and human resources currently available for this purpose are miniscule in comparison with what would be realistically required to undertake a comprehensive tobacco control programme. For example, the total sum specifically allocated by the Union (Central) Ministry of Health and Family Welfare for tobacco control activities during 2001–2003 was only Rs 45 million (US$ 0.98 million). No State-level allocations were specifically made for this purpose, though some states, such as Goa, have undertaken counter-advertising and regulatory measures.

It is also obvious that tobacco control programmes would not take root, or would wither away, in the absence of adequate financial and human resources to seed, stimulate, support, strengthen and sustain them. How can community mobilization effectively occur if mass media efforts are not funded? How can tobacco cessation be promoted if both community- and clinic-based facilities are not widely available across the country? How can tobacco products be regulated without establishing independent testing laboratories for the verification of industry claims? How can laws already passed and rules already promulgated be effectively enforced if appropriate mechanisms are not created for their continuous monitoring? How can the tobacco farmers and *beedi* workers be freed from the stranglehold of the tobacco industry, and encouraged to find alternative livelihoods, if they are not assisted in that effort by governmental and non-governmental agencies espousing tobacco control?

The answer to all the above questions also begins with a question: What are the financial and human resources required for effectively implementing a comprehensive tobacco control programme in India and how can these be made available? This section addresses these issues and identifies some of the ways by which such resources can be mobilized.

The process of mapping current and future resource needs, existing resource flows, resource gaps and new resource streams is complex, and demands extensive analytical research. Such studies have not been systematically undertaken in the area of tobacco control in India. A well-designed study, addressing these issues with the required rigour, is a high priority of policy-related research. In the absence of such a study so far, this section profiles the potential sources that can contribute to the augmentation of the financial and human resources essential for tobacco control in India.

Financial resources

Financial resources can come from several sources which are listed below.

1. Government allocations

Government allocations for tobacco control-related activities in the health sector, as well as in other relevant government sectors, are

mandatory for initiating a tobacco control programme and for maintaining it at a steady level of operational efficiency. For this to happen, a specific budgetary allocation needs to be made from both plan and non-plan funds. The budget of the Health Ministry should have a clearly earmarked allocation for tobacco control programmes. Presently, funds are obtained only from the biennial grants of the World Health Organization (WHO) (country fund of WHO). The National Cancer Control Programme too does not have specific allocations for tobacco control. This anomaly needs to be corrected by developing and independently financing a National Programme for Tobacco Control through specified budgetary allocations.

At the same time, it must be recognized that the multisectoral mandate of a tobacco control programme requires support for tobacco control activities undertaken by other sectors and ministries. For example, these may relate to support for alternative occupations (Ministries of Agriculture, Industry and Labour), introducing changes in the school curriculum and training of teachers for integrating tobacco control activities into the school system (Ministry of Education), developing work-site programmes for tobacco control (Ministries of Industry and Labour), and organizing mass media campaigns for health education and curbs on cross-border advertising (Ministry of Information and Broadcasting). Such support may be provided through direct allocations to the concerned ministries from Central and State budgets or channelled through the Ministry of Health.

In the case of the Central Government, the sectoral allocations would have to be approved by an Inter-ministerial Coordination Committee (IMCC), which would oversee the national programme for tobacco control. In the case of the latter, the Health Ministry would provide funds to other sectors from its total allocation for tobacco control, based on a needs assessment to be conducted in consultation with each of the partner ministries.

The level of funds allocated for a National Programme for Tobacco Control by the Central Government is dependant on the nature and scale of activities proposed under it. These are decisions which are dependent on the political will of policy-makers and the priority accorded by them to tobacco control. Even though the government, by itself, would be unable to provide all of the financial resources required for implementing a broad-based tobacco control programme, a sizeable contribution from the government is required on a regular basis to signal its unwavering commitment to the mission of tobacco control. This needs to be clearly reflected in future budgetary allocations.

2. Tax on tobacco products

A dedicated tax on tobacco products would generate a large pool of financial resources, from which several components of the tobacco control programme can be funded. Examples of such taxes being levied in other countries are given in Section 7.1. Several states in the USA and provinces in Australia, as well as Asian countries such as Thailand and Nepal have adopted this practice. The revenues earned from such a tax/cess/levy have been utilized for funding not only tobacco control programmes but also a variety of other health promotion activities.[1–3]

A proposal by the Indian Ministry of Health, to impose a cess on tobacco and alcohol, has been recently reported in the media (*Indian Express*, 4 and 5 October 2004). A sum of Rs 3000 crores is expected to be raised annually through this mechanism, and would be utilized for strengthening rural health care delivery systems. Such a proposal would need to be considered and approved by the Union Cabinet before it becomes operational. Such a cess ('sin tax') would assuredly yield a large revenue that can be earmarked specifically for purposes prioritized by the Ministry of Health. Financing a comprehensive National Programme for Tobacco Control must figure high among the intended uses of the money generated by such a cess. A large portion of the fund raised from tobacco would need to be earmarked for tobacco control programmes. Otherwise, the special cess would

yield no specific benefits for tobacco control, as in the case of existing taxes and levies on tobacco.

Such a tax or cess would not be an alien principle, as the concept of an earmarked cess has already been applied to the tobacco trade in India, albeit for other reasons. The *Beedi* Worker's Welfare Fund was set up in 1976, through an Act of the Indian Parliament.[4] Under the provisions of this Act, Rs 2 per 1000 manufactured *beedis* are earmarked for providing a variety of welfare measures to benefit *beedi* workers and their families. The same principle can now be applied to generate revenue from the tobacco industry for wider social benefits, especially in the area of tobacco control.

It must also be recognized, as detailed in Section 6.1, that increasing taxes on tobacco leads to a decline in tobacco consumption, especially among the young and the poor, where the price-elasticity is greater. A special cess on tobacco would, therefore, provide the dual benefits of generating financial resources for tobacco control and contributing directly to tobacco control through its effect as a disincentive to tobacco use.

3. Regulatory levies

Regulatory levies are another mechanism by which funds for tobacco control can be generated, through a fee collected by the National Regulatory Authority (NRA) for testing and regulating tobacco products. This is done both prior to the introduction of a new tobacco brand into the market, and also for annual renewal of the permission to market the brand.

Brazil has established a National Tobacco Regulatory Authority that charges such a fee for mandatory annual testing of every brand of marketed tobacco products.[5,6] The money accrued from the regulatory levy is utilized for funding tobacco control programmes. This model can also be followed by other developing countries. The Framework Convention on Tobacco Control (FCTC) requires the ratifying countries (members of the Conference of Parties [COP]) to test and regulate tobacco products, and provide related information to the public. India too intends to regulate tobacco products and, for that purpose, proposes to establish tobacco product-testing laboratories. This would enable to meet the provisions of the national law as well as those of the FCTC (*see* Sections 7.1 and 7.2). This would provide an opportunity for imposing a regulatory levy on all marketed tobacco products, by brand, for annual testing. A large quantum of financial resources can thereby be generated and utilized for funding the proposed national tobacco control programme.

4. Penalties

Penalties, collected for violations of the various provisions of the Indian law on tobacco control, could also contribute to generating financial resources for tobacco control. Since most of the provisions will need to be enforced by State or municipal authorities, the money would accrue to them. These resources can be utilized for tobacco control activities at the State or local level.

5. Private sector resources

Private sector resources should also be mobilized to fund tobacco control programmes. Apart from large foundations which may provide substantial grants to civil society organizations, the corporate sector too should be motivated to conduct or fund activities related to tobacco control, as part of other corporate social responsibility programmes.

6. Civil society resources

Civil society resources are usually quantitative in terms of human resources but a large number of non-governmental organizations (NGOs) are also capable of mobilizing substantial financial resources. Development and other health NGOs (such as those engaged in HIV/AIDS programmes) should be encouraged to include tobacco control as part of their operations so that large gains can be made for tobacco control with minimal incremental expenditure.

7. International financial assistance

International financial assistance is required to rapidly upscale tobacco control activities and implement a comprehensive national programme. Such financial assistance can be obtained through existing bilateral mechanisms or multilateral channels. Inter-governmental development assistance and programmes funded by the World Bank are examples. The FCTC proposes to strengthen such mechanisms to provide greater financial assistance to developing countries. Article 26 of the FCTC also includes a provision for the potential creation of a Global Fund for tobacco control. This fund, intended to assist developing countries in implementing the FCTC, would be created if the COP deems it necessary, after a review of the existing financial mechanisms. During the FCTC negotiations, India and other developing countries were strong votaries of establishing such a Global Fund. If this view prevails at the first meeting of the COP, it would create a specific mechanism for drawing upon international financial assistance for India's tobacco control programme.

Human resources

Human resource development, as relevant to tobacco control, must enhance the capacity of the following.

1. Health care system

The health care system needs to be sensitized and strengthened to effectively deliver tobacco-related health education and promote tobacco cessation. Presently, these activities are undertaken only sporadically and on a limited scale. The establishment of a National Programme for Tobacco Control would require extensive and energetic participation of health care professionals of all categories, at all levels of health care. This is especially necessary in the rural primary health care setting, since tobacco use is widely prevalent in rural areas.

Multipurpose health workers, nurses, doctors and a variety of other health care providers would prove to be valuable resources for tobacco control programmes, if they are suitably trained and adequately motivated. Such training needs to be initiated from an early stage of their education and periodically reinforced through continuing education programmes. Undergraduate training for medical and nursing students needs special attention in this regard, as the conventional disease-specific and organ systems-oriented approach does not adequately stress risk-factor prevention and control. Organizations of health professionals, such as associations of doctors or nurses, should be motivated to move to the forefront of tobacco control implementation, and utilize their vast national and regional networks to influence communities as well as individuals to adopt tobacco-free behaviours. It is also essential that health professionals act as appropriate role models by not consuming or endorsing tobacco in any form and by avoiding linkages with the tobacco industry.

While there is a need to design and deliver a National Programme for Tobacco Control to maintain a specific focus and swift momentum, it must be recognized that the activities related to tobacco control must be widely integrated into other health care programmes. Reproductive health, nutrition, malaria control, tuberculosis control and HIV/AIDS programmes are among those which have a countrywide presence and recognition. If tobacco control activities are undertaken, even on a modest scale, by the vast personnel engaged in these programmes, the overall impact would be large.

2. The education system

The education system must be optimally utilized to spread information, shape attitudes and strengthen skills as relevant to tobacco control. Schools and colleges should become arenas for public health action intended to prevent primary uptake of tobacco and to promote early cessation among those who have already acquired the habit. The role of teachers and other school staff is especially important in the Indian society, where a great deal of respect is accorded to them by

young students. Teachers, therefore, become important role models and guides who shape values and behaviours. In contrast to the experience of western countries, where many teacher-led, school-based programmes for tobacco control were not effective, there is considerable scope for such an approach in the Indian cultural context. This approach needs to be utilized and scientifically evaluated. In addition, the school curriculum should also be strengthened to provide adequate and appropriately packaged information on issues related to tobacco.

3. Other development-related sectors

Other development-related sectors should also be suitably stimulated to integrate activities related to tobacco control into the agenda of their development programmes. This is necessary since such programmes have a wide grassroots presence and possess an extensive outreach. Rural development, women and child development, disability assistance, gender empowerment and tribal welfare are among the programmes which are well resourced and have a wide impact, especially on vulnerable groups. Tobacco control would also be correctly perceived by people as a development issue and not merely as a health issue, if the development sector actively advocates tobacco control.

4. Civil society groups

Civil society groups are valuable resources whose potential for steering and strengthening the components of tobacco control programme must be fully realized. Their capacity must be enhanced, and financial resources provided to enable them to contribute through advocacy, programme leadership, community mobilization, monitoring and countering the tobacco industry. Over the past two decades, their high level of motivation and commitment has been in ample evidence and led to the enactment of a strong law for tobacco control as well as India's support to the FCTC. In the future, implementation of a National Programme for Tobacco Control is likely to be greatly benefited by the pool of human resources provided by civil society groups. This role should not be confined to health NGOs only. It is essential to extend civil society coalition for tobacco control by linking with environmental protection groups, human rights activists, development NGOs and poverty alleviation groups, who are natural (but presently under-sensitized) allies for tobacco control.

5. Enforcement agencies

Enforcement agencies need to become actively engaged in the implementation of laws related to tobacco control. They should be appropriately trained for this purpose, and adequately motivated to perform their functions with consistency and commitment. While the personnel of such agencies often accord greater priority to other activities and demands on their time, the importance of tobacco control must be clearly communicated to them.

6. Non-health professional groups

Non-health professional groups (such as lawyers, economists and social scientists) also need to be attracted and equipped, in larger numbers, to engage in activities related to tobacco control. Formulation of laws for tobacco control, litigation against tobacco industry and protection of tobacco control advocates from vexatious litigation by the tobacco industry call for such legal expertise to be developed and readily available. Economists too are needed to track and evaluate the changing role of tobacco in the Indian economy, estimate the costs of tobacco to Indian society, and design and appraise fiscal interventions geared to advance the agenda of tobacco control. Social scientists too need to study the social determinants of tobacco use in a rapidly changing sociocultural landscape and fashion appropriate behavioural interventions for application at community and individual levels to attain the goals of tobacco control.

7. Local self-governments

Local self-governments are becoming increasingly important under the Panchayati Raj

system, wherein decentralized decision-making is encouraged and the power of implementation is passed on to locally elected bodies at village and subdistrict levels. These bodies help to evolve a community consensus on important issues and pave the way for collective action. They are vital for setting community norms. Their endorsement of and active involvement in tobacco control programmes is an essential prerequisite for the success of these programmes. Their participation must be ensured through active engagement by both government and civil society groups.

8. The community

The community as a whole will provide the human resources required for a successful tobacco control programme, provided people at large can be galvanized into action by mass education on tobacco control and facilitatory support is given by governmental agencies and civil society. It is imperative that tobacco control becomes a people's movement and is not seen merely as a feeble government programme or a fad of health professionals. Community groups need to be actively engaged in planning the implementation pathways of key components of the programme and should be encouraged to assume a leadership role in conducting the activities.

8.1 RESOURCING: FINANCIAL RESOURCE MOBILIZATION AND HUMAN RESOURCE DEVELOPMENT

KEY MESSAGES

- To successfully initiate, implement and evaluate a National Programme for Tobacco Control, the scale of financial and human resources required would be much larger than currently available.
- Financial resources can be generated from a variety of sources: increased government allocations, an earmarked tobacco tax or cess, regulatory levies, penalties, private sector resources, civil society resources, international financial assistance.
- Human resource development, as relevant to tobacco control, must enhance the capacity of: the health care system, the education system, other development-related sectors, civil society groups, enforcement agencies, non-health professional groups, local self-governments, and the community as a whole.

8.2

Coordination: Establishment of a National Coordinating Mechanism

Effective enforcement of a tobacco control programme at the national level can be achieved by establishing a national coordinating mechanism that includes government and non-government stakeholders. A common Indian Tobacco Control Plan, with synchronized action by different groups, would provide greater synergy to the campaign and ensure uniform action. With the enforcement of the Indian Tobacco Control Act, coordination at the national level would ensure its effective implementation. A national coordinating mechanism becomes absolutely essential from the point of view of legislation enforcement. India, being a signatory to the FCTC and having ratified it, will also be required to adhere to the provisions of the FCTC when it comes into force. To implement the provisions of the Indian Tobacco Control Act and FCTC, establishing a national coordination mechanism is an essential need of the time. Article 5.2 (a) of the FCTC obliges the ratifying parties to establish or reinforce and finance a national coordinating mechanism or fiscal points for tobacco control.[7]

At the national level, concerted and strategic tobacco control efforts can lead to meaningful changes in tobacco consumption. Developing a national plan of action for tobacco control and establishing the infrastructure, with adequate capacity, to implement the plan of action are important steps in meeting the challenge of effective tobacco control.[8]

Based on experiences from other counties and WHO's guidelines for a national coordination mechanism, it would be ideal for a country to form a national coordination mechanism through four types of agencies:

- NRA, affiliated to or operated by the Government;
- National Coordinating Body (NCB), having multiple stakeholders including civil society groups, whose role is recognized and recommended by the FCTC;
- An IMCC to effectively enforce the national and international legislations related to tobacco control in the country;
- A State-level Coordinating Body (SCB): For larger countries, a multisectoral committee at the State and district level is recommended, to coordinate with the Central Government and implement action at the State and district level.

The structure and composition of these committees would differ from one another but their overall goal would be to develop a national plan of action for tobacco control, to select and coordinate appropriate components and activities involving policy and legislation, smoking cessation, education and advocacy, and to integrate other elements embodied in the national laws and FCTC.[8] These committees should have regular reporting mechanisms to ensure accountability, and allow community involvement and participation.

Need for an NRA

Contemporary tobacco products include many ingredients and additives. It has been extensively researched and shown that nicotine is the main ingredient in tobacco which causes addiction. Apart from nicotine there are other toxic chemicals in tobacco. Harmful ingredients in tobacco and tobacco smoke are a cause of great concern to health professionals, policy-makers and regulators around the globe. The essential need to regulate tobacco products has been detailed in Section 7.2 of this report. Apart from

the obvious need to regulate tobacco products, the FCTC's three articles (Articles 9, 10 and 11) also address the regulation of tobacco products.

Tobacco product regulation around the globe

Some countries with progressive tobacco control programmes, such as Canada and Brazil, have regulated tobacco products in their countries by establishing permissible upper limits for tobacco product constituents and emissions. The functions of the regulatory authority in Canada include:[9]

- prescribing the level of ingredients in the tobacco product as well as in its emissions
- proscribing certain ingredients from being added to tobacco products
- prescribing tobacco testing methods
- prescribing mandatory information that tobacco manufacturers should provide to the Canadian government about their product and its emission.

The Brazilian government requires that all tobacco companies must register tobacco products, by brand, and declare to the government all information on the types of additives used and compounds present in the mainstream and side-stream smoke of the products (*see* Box 8.1).[10]

Tobacco companies under the European Union are required to disclose a list of all ingredients for each brand and provide appropriate reasons for the inclusion of each additive in the tobacco product along with an explanation of the reason for that additive. This information is not restricted to the government but is made public and consumers are informed about the ingredients and additives.[9]

The US Department of Health and Human Services specifies that every company is required to send a list of all the ingredients that its company uses in the tobacco products. This information is not segregated as per different brands or varieties. This information is not made public.[9]

Need for establishing an NCB

The WHO FCTC recognizes the importance of participation of civil society to achieve the goal of reducing tobacco-related morbidity and mortality.[8] A multisectoral tobacco control programme should also involve the private sector. An NCB can include stakeholders such as health professionals, lawyers, the media, NGOs, economists, members from business, industry and labour unions, children's rights groups, environmental groups, etc. The NCB's main role should be to act as a watchdog to ensure the enforcement of existing legislations and guide the development of future policies based on need and scientific evidence for efficacy. The NCB would also work on broader issues of public health education, mobilizing communities and advocacy.

Need for an IMCC

The Health Ministry is usually the focal point to spearhead the tobacco control action plan in any country. However, the Health Ministry has to coordinate with other ministries to ensure action on all aspects of tobacco control. To ensure effective enforcement of the national legislation as well as the provisions of the FCTC, such coordination between ministries is essential.

What is needed in India?

Since the Indian Act contains mainly regulatory provisions related to the production, packaging and sale of tobacco products, the establishment of an Indian NRA becomes an urgent necessity even while the goal of a broad-based NCB needs to be pursued. Without a strong and effective NRA the provisions of the Indian Act may face the prospect of implementation failure. To obviate such a danger, establishment of an Indian NRA through research (for precedents in other countries), modelling (in accordance with national needs and systems) and advocacy (to mobilize political support for the establishment of such an agency) is an immediate priority.

Box 8.1 National Coordinating Mechanism, Brazil: A case study

Brazil is an example to follow as a basis for developing a national coordinating mechanism on tobacco control in any country. It has formed both a National Commission on Tobacco Use (NCTU), which is an inter-ministerial group to guide tobacco control efforts at the national level, as well as an autonomous agency that regulates and controls the production, content and advertising of tobacco products. This agency monitors and enforces Brazil's tobacco control legislation.[11] The National Regulatory Authority functioning in Brazil is the ANVISA (Agencia Nacional de Vigilancia Sanitaria) or National Health Surveillance Agency, which was established in January 1999, as a result of the Federal Government's decision. Establishment of this agency augmented the Brazilian government's tobacco control efforts and Brazil became a world leader in regulating and controlling tobacco products.[12] This agency is an independently administered, financially autonomous, regulatory agency and is linked to the Ministry of Health under a management contract.[13]

ANVISA's role in regulating tobacco products

ANVISA regulates tobacco products in Brazil as per legislation by performing the following functions:

- ANVISA prescribes the maximum levels of tar, nicotine and carbon monoxide presently allowed in cigarette smoke released by tobacco products sold in Brazil. It has also prescribed for a further gradual reduction in the levels of tar, nicotine and carbon monoxide in tobacco products.
- ANVISA mandates the annual registry of tobacco products (smoked and smokeless forms) and reporting by the industry. This registration is applicable to national, importing or exporting tobacco companies.[14] Tobacco companies have to pay a fee for each brand that they produce. Under reporting, the companies have to declare information related to:

  —type and amount of tobacco used in the product
  —ingredients and additives used
  —specification of filters and wraps
  —studies supporting the use of ingredients and additives
  —composites present in the primary and secondary smoke
  —total composites present in tobacco
  —data on sales and production.

  This registration is reviewed by ANVISA's Management of Smoking Products division under the technical supervision of the National Coordination for Cancer Prevention and surveillance of the National Institute of Cancer.[14] The fund generated through collections from the registration fee has been used for funding tobacco control initiatives such as the Laboratory for Tobacco Analysis and the Centre for Clinical Studies on Nicotine Addiction at the National Cancer Institute in Brazil.
- ANVISA also prohibits the use of any deceptive message on tobacco packages. It prescribes and monitors the labelling of tobacco packages: ANVISA requires every cigarette pack to carry information on the levels of tar, nicotine and carbon monoxide along with a specified warning, 'There are no safe levels for the consumption of these substances.'
- Testing methods are defined to be in accordance with the ISO (International Standards Organization) and acknowledged by ABNT (Brazilian Association of Technical Norms).

ANVISA'S role in monitoring the display of health warnings

ANVISA's resolution determines that packages and advertisement material of smoking tobacco products, except those intended for exportation, should include health warnings followed by pictures illustrating their meanings.

- ANVISA mandates that all tobacco products embody on packages and advertisements warning levels to consumers about the harms associated with the use of these products.
- ANVISA prescribes the content for health warnings as well as the logo of stop smoking hotline numbers to be printed on advertisements of the product on posters, billboards and placards inside stores, as mandated by law.
- These warnings are monitored and controlled by ANVISA and violators are penalized under the federal law.

An NRA, based on best practices established internationally, should include several functions under its ambit. It should

—develop requirements for each tobacco product
—decide standards for constituents
—decide standards for emissions
—design tobacco product packages
—decide and specify testing methodologies
—measure compliance with the prescribed performance standards and requirements
—prohibit deceptive and misleading information
—restrict the use of any toxic chemicals and additives
—regulate 'harm reduction' products
—mandate the registration of national, importing or exporting tobacco companies and their products.

Objectives of the National Coordination Mechanism

The National Coordinating Mechanism should have the following objectives:

Establishment of an NRA

- To regulate all tobacco products (smoking and smokeless) and their marketing, the contents and emissions of tobacco products, tobacco product disclosures, and packaging and labelling of tobacco products;
- To regulate 'harm reduction' products (nicotine replacement therapies [NRTs], *beedi* substitutes, oral tobacco substitutes);
- To set standards for the testing of constituents and emissions of tobacco products.

Establishment of IMCCs (at Central and State levels)

- To strengthen enforcement (ban on advertisements and ban on smoking in public places);
- To discuss among the ministries on tobacco-related issues and guide the formation of rules on the provisions of the Indian Act and to guide enforcement of the FCTC, when it gets enforced;
- To conduct inter-ministerial discussions to plan and decide on a common Indian Tobacco Control Programme (ITCP) and steer the efforts of all ministries towards achievement of a common goal of tobacco control in India;
- To guide multisectoral implementation of the tobacco control programme following the guidelines of the ITCP.

Establishment of an NCB

- To monitor violations related to the provisions of the Indian Tobacco Control Act that have been enacted and notified;
- To guide and assist the Health Ministry in implementing the ITCP in India;
- To coordinate activities at the national level related to implementing the provisions of the FCTC on education, communication, training and public awareness.

Establishment of an SCB

- To ensure effective enforcement of tobacco control laws at the State level;
- To involve multisectoral State-level units in implementing the activities envisaged in the National Programme for Tobacco Control at the State level.

Figure 8.1 describes the interaction between the agencies at the Central and State level to coordinate the National Programme for Tobacco Control in India. At the Centre, IMCC would interact with the NCB as well as NRA. At the Centre, the IMCC would devise an action plan to implement the objectives of the National Programme for Tobacco Control. To plan this action they would receive inputs from the NCB. Subsequent to having identified the objectives and actions, the IMCC will instruct the NRA and NCB to function on the basis of the guidelines issued by the IMCC. The Central-level IMCC would also communicate this action plan to IMCCs at the State level to ensure uniform action for tobacco control. Similarly, the NCB at the

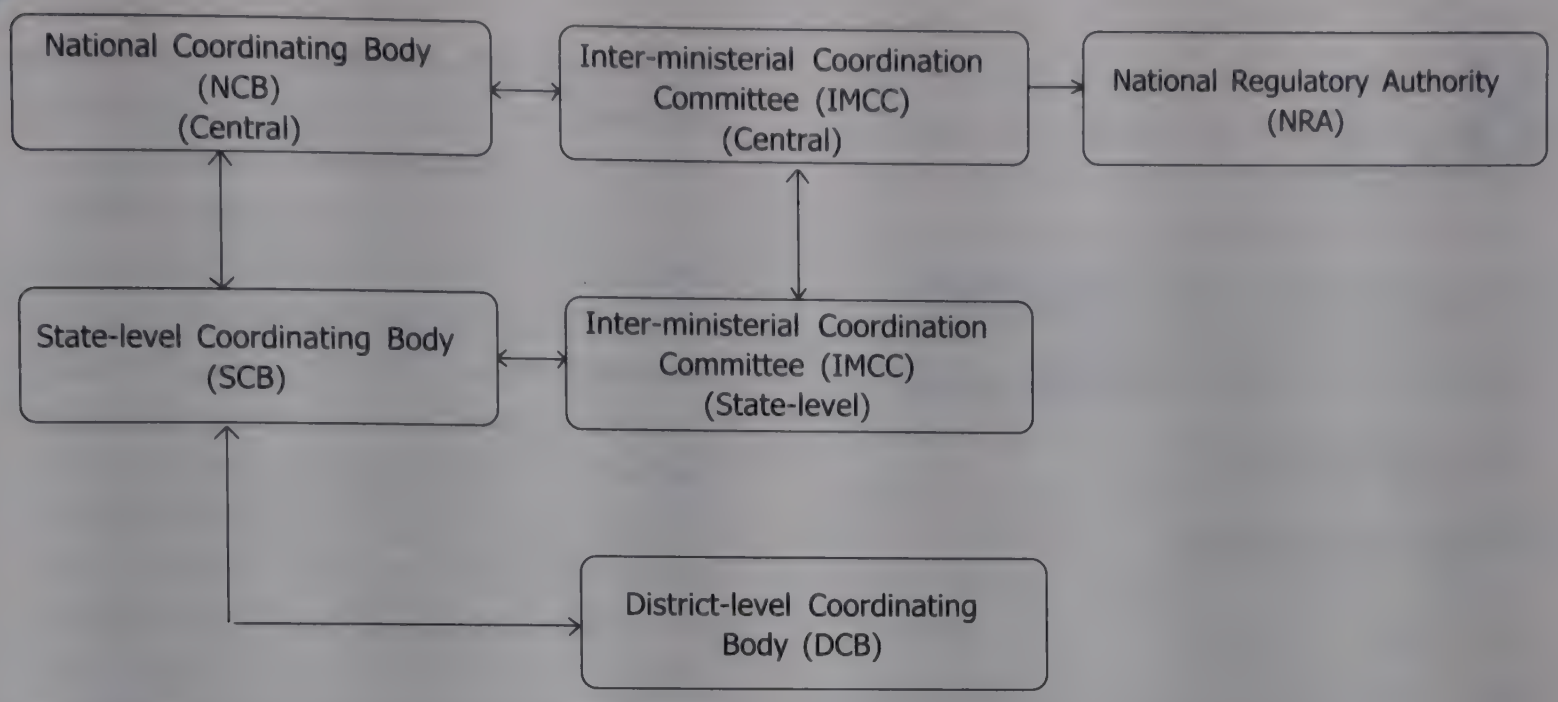


Fig. 8.1 Proposed scheme for a national coordinating mechanism for tobacco control

Centre would coordinate with the SCB at the State level to organize similar activities and advocacy against violations. The SCB would also interact with the IMCC at State level to coordinate State-level action on tobacco control. The SCB and IMCC at the State level would also be responsible for passing on the action plan to the District-level Coordinating Body (DCB) which will be responsible for organizing action and activities at the district level. The DCB would also send feedback and suggestions to the other bodies through the SCB so that these can be incorporated as activities are planned at the Central level in India. Such smooth interaction between the coordinating agencies at the Central and State level will leave no scope for ambiguity in interpreting the laws related to tobacco control at any level and orders passed at the Centre would reach every district in India.

8.2 COORDINATION: ESTABLISHMENT OF A NATIONAL COORDINATING MECHANISM

KEY MESSAGES

- A national coordination mechanism is essential from the point of view of legislation enforcement.
- A national coordination mechanism should have four types of agencies—a National Regulatory Authority (NRA), a National Coordinating Body, an Inter-ministerial Coordination Committee and a State-level Coordinating Body.
- Without a strong and effective NRA, the provisions of the Indian Act may be faced with implementation failure.

8.3

Integration of Tobacco Control into Health and Development Programmes

This section draws upon the lessons learnt from global as well as the Indian experience (detailed in the preceding chapters and sections), and aims to delineate the cardinal elements in the design of a comprehensive tobacco control programme and methods for its effective delivery.

Tobacco control programmes should be comprehensive in nature, and incorporate the demand and supply reduction measures recommended by the FCTC. Ideally, the measures taken should be the strongest possible and go beyond the minimum mandated by the FCTC. The programme should involve all the stakeholders. It should ultimately be integrated into the existing delivery systems through public, private, public–public, private–private and public–private mechanisms. It is important to involve all stakeholders at all stages of the programme, from development to implementation and evaluation.

Components

A comprehensive tobacco control programme in India should consist of the following:

1. *Laws and policies:* There is a law already in place for tobacco control, which should be adequately publicized and enforced. Law enforcers should be informed and sensitized about its various provisions, such as the ban on smoking in public places, ban on selling tobacco products to legal minors, and regulation of packaging and labelling of tobacco products. Amendments to the Indian law would need to be made, as required, to bring it in conformity with the FCTC.
2. *Fiscal components*: These should include a rational tax structure that will provide a tax- and price-based disincentive for tobacco consumption in all forms, and not merely transfer consumption from one tobacco segment to another. *Beedis* and oral tobacco products should be taxed at sufficiently high rates. A dedicated tax or cess should be put in place which can be utilized for resourcing tobacco control programmes. These taxes should ensure that the price rise takes inflation into account. The subsidies given to the industry should be discouraged and disincentives should be put in place, both for the industry and the consumer.
3. *Educational component:* Public education should be an integral part of efforts to prevent both initiation of tobacco use and encourage tobacco cessation. The mass media, which encompass radio, television, the print and electronic media, can be used to educate people and would be very effective because of their wide reach. Educational efforts should be aimed at both preventing initiation as well encouraging users to quit. People should be informed about the harmful effects of tobacco use, the benefits of quitting as well as the cessation methods available. Information about the hazards of tobacco should be incorporated into the school curriculum.
4. *Advertising and counter-advertising:* All forms of tobacco product advertising, both direct as well as surrogate, should be effectively banned. This already forms a part of the Indian Tobacco Law. To ensure successful implementation, it is essential that surrogate advertising is checked. Steps should be taken to check cross-border advertising. There should be adequate counter-advertising which deglamourizes tobacco use.
5. *Cessation programmes:* Cessation programmes should be targeted at people who are already using tobacco products. The early benefits of a tobacco control programme, in terms of impact

on health outcomes, are mostly derived from a successful cessation component. Health professionals as well as tobacco users should be sensitized to the benefits of cessation.

6. *Regulation of products:* The purpose of regulation should be to progressively reduce the levels of harmful chemicals and alter physical characteristics that influence the delivery of those chemicals. It requires the development of adequate laboratory capacity for the testing of tobacco products and their emissions. These should not be owned, operated or influenced by the tobacco industry.
7. *Supply-side actions:* Tobacco farmers should be informed about alternative crops which do not harm human health. This should be done only after a thorough in-depth market analysis. They should also be given government assistance during the period of transition. Another essential measure on the supply side is to prevent the smuggling of tobacco products, which will require cooperation at the international level.

Implementation pathways

1. *National Programme for Tobacco Control:* An independent programme that will incorporate the different components (discussed above) is required. It should guide an NCB, with various stakeholders such as policy-makers, technical experts, civil society representatives, etc. This coordinating body will be primarily involved in the design, development and monitoring of the programme. It would require dedicated budgetary support. This can come from a tobacco cess, which will ensure that it is self-sustaining (as described in Section 8.1).
2. *Integration into other health programmes:* The elements of tobacco control can be operationalized by integrating them into various health programmes being undertaken presently. In the Reproductive and Child Health Programme, health education can be imparted to those availing the services. It can also serve as a place for opportunistic screening for tobacco use. Pregnant women who use tobacco can be dissuaded from the habit. Others can be educated about the need to safeguard their infants and children from exposure to second-hand smoke. In the National Cancer Control Programme, separate allocation should be made for tobacco control, which can be used for promoting tobacco cessation and providing mass health education. The vast human resources available with various programmes such as the AIDS Control Programme and Malaria Control Programme can be used additionally for tobacco control, especially for health education activities. This will have immense benefit coupled with a low incremental cost. As a relationship between tuberculosis and smoking is being reported with increasing frequency in the medical literature, the Tuberculosis Control Programme can be used to impart health education as well as screen patients for tobacco use. Government health staff such as doctors, nurses and multipurpose health workers should also be sensitized to the ill-effects of tobacco use and should be encouraged to screen for tobacco use and give health education to the public.
3. *Integration into developmental programmes:* The tobacco control programme should also be operationalized by integrating it into various developmental programmes such as poverty alleviation, rural development, women and child development, and tribal welfare. These programmes have an extensive reach and widespread presence at the grassroots level. These can be used to spread the message about tobacco control. They can also be used to provide tobacco cessation services to the community.

The tobacco control programme can also be integrated with child's rights and environmental programmes. A child's right to breathe in smoke-free air can be linked to tobacco control. It can also be a part of environmental

programmes on the dangers of air pollution and deforestation.

4. *Settings approach:* Tobacco control programmes should use a settings approach. Defined settings such as schools, workplaces, homes and public places should be made smoke free. WHO programmes related to 'Healthy schools', 'Healthy workplaces' and 'Healthy cities', are models wherein tobacco-free norms are developed and observed in different settings. Students, parents, teachers and others should be made aware of, and involved in, tobacco control activities. Schools can also spread the message regarding the harmful effects of tobacco use to neighbour-hood communities via students.

Planning

- *Engaging all relevant stakeholders:* Various stakeholders should be involved in the planning process. These include administrators, politicians, civil society groups, technical experts, the media, consumer organizations, etc.
- *Establishing coordinating mechanisms between Central and State Government, and district levels:* There should be a coordinating body at the Central Government level which will monitor the overall progress. A coordinating body will also be required at the State Government and district levels. These bodies should have a mechanism for regular interaction within and among themselves. It will help in ensuring better coordination among various agencies so that there is no repetition or overlap.
- *Goals and targets to be set and monitored:* The programme should have clearly identified goals. Monitoring and evaluation mechanisms must be defined and utilized. It should have short- as well as long-term targets. This will ensure that mid-course corrections can be made to rectify deficiencies and discrepancies.
- *Allocation of resources (funds) to be monitored:* To ensure judicious use, fund allocation should be regularly monitored *vis-à-vis* the targets achieved. This will ensure accountability.
- *Building coalitions and partnerships:* There should be partnerships within, as well as among, civil society groups, government departments and private sector organizations. Grassroots-level NGOs should be encouraged to include tobacco control as part of their activities. The various civil society groups should coordinate among themselves and share their expertise. Private sector resources should be tapped for tobacco control activities. The private sector can be used to fund various community-level activities as part of its corporate social responsibility programmes, apart from implementing work-site programmes. Various ministries such as those of Health, Information and Broadcasting, Finance, Agriculture, Industry and Labour should be collectively involved. There should be an IMCC to oversee the programme.

8.3 INTEGRATION OF TOBACCO CONTROL INTO HEALTH AND DEVELOPMENT PROGRAMMES

KEY MESSAGES

- The tobacco control programme should be comprehensive in nature and involve all the stakeholders in the entire process, right from development to implementation and evaluation.
- It should be integrated into the existing delivery systems such as the health care system and other developmental programmes.
- It will require dedicated budgetary support, which can be drawn from a tobacco cess.

8.4

Global Models for the Evaluation of Tobacco Control Programmes

Tobacco control programmes are designed to ultimately help reduce disease, disability and death related to tobacco use. To determine the effectiveness of these programmes, one must document and measure both their implementation and effect. Evaluation is a tool used to assess the effectiveness of implementation and outcomes of a programme to demonstrate accountability to programme stakeholders (including state and local officials, policy-makers, and community leaders) by showing them that a programme really does contribute to reduced tobacco use and less exposure to second-hand smoke. Evaluation findings can thus be used to show that money is being spent appropriately and effectively, and that further funding, increased support and policy change might lead to even greater improvement in health outcomes. Evaluation helps ensure that only effective approaches are implemented and that resources are not wasted on ineffective programmes.

Features of a tobacco control programme

The World Health Organization (WHO) has identified four key measures needed for comprehensive tobacco control:[15]

- Reducing accessibility to tobacco products. This would include reducing affordability by raising taxes, and banning sale of tobacco in educational institutions and to minors.
- Ensuring full and free consent among users and potential users of tobacco products. This would mean an end to direct and indirect advertising, and misleading messages on tobacco product labelling and packaging as well as full disclosure of the toxins and additives present in the product, etc.
- Protecting the health and well-being of those who do not use tobacco products. This would include providing smoke-free public and workplaces.
- Regulating products through legislation. This would include controlling the additives and allowing permissible levels of toxic ingredients found in tobacco products.

The Centers for Disease Control and Prevention (CDC), USA has also identified these goals and, in addition, it also talks about identifying and eliminating the disparities related to tobacco use and its effects among different population groups.[16,17]

A scheme for evaluating tobacco control programmes should take into account these goals and assess the extent to which they have been accomplished. In the context of tobacco control, the assessment process should include the following components.

Surveillance

Surveillance of the patterns of tobacco consumption by the type of products, region, gender, age and social class should be conducted. Tobacco-related knowledge and attitudes should especially be disaggregated with respect to social class. The existing surveys such as the National Family Health Survey (NFHS) and the National Survey Sample (NSS) can be further strengthened to obtain more tobacco-related information. The Government of India has recently launched the Integrated Disease Surveillance Programme (IDSP). The programme should incorporate surveillance of tobacco use as well as tobacco-related diseases. Surveys in specific populations, such as the Global Youth Tobacco Survey (GYTS) which examined tobacco use among youth and its correlates, can be carried out.

The policies of the State and Central

Governments should also be routinely monitored. This includes tracking the development of tobacco control-related ordinances, laws and rules, and their implementation.

The national aggregate indicators which should be studied include: Land area under tobacco cultivation, annual tobacco production, annual domestic consumption of unmanufactured and manufactured tobacco (including major categories of tobacco products), annual export of tobacco, tax revenue from tobacco and cause-specific mortality of tobacco-related diseases.

Periodic statewide surveys of local opinion leaders, government officials and law enforcement personnel should be used to assess policy changes and needs. Difficulties faced by the enforcement agencies in implementing tobacco control programmes must also be looked into.

Health outcome data from various cancer registries, hospitals and other related sources should also be monitored to detect changes and identify the effects of such programmes on the incidence and death rates of tobacco-related cancer and cardiopulmonary disease.

Evaluation

School programmes

Evaluation of school-based education programmes for the prevention of tobacco use should be conducted frequently in both public and private schools.

Local programmes

At least 10% of the budget of each local project should be used for tobacco control. The state programme should ensure the quality of evaluation of local programmes by providing guidance, training and technical assistance to programme evaluators. Experience in California (Box 8.2) and Massachusetts has shown that these funds can be used both for statewide systems and to increase the technical capacity of local programmes to perform evaluation activities.[17]

Media campaigns

Evaluation of statewide media campaigns should be based on surveillance data, and a media-tracking study should be done for each campaign.

Tobacco industry's activity

The evaluation should also monitor the tobacco industry's marketing practices and its influence on the social, economic and health environment of the community.

Some examples of best practices in surveillance and evaluation activities are as follows:[17]

- National surveillance systems such as the Behavioral Risk Factor Surveillance System enables states in the USA to evaluate programme efforts in relation to ongoing efforts and initiatives in other states. States have enhanced these national systems by adding state-specific questions and modules to capture local data.
- Several states in the USA conduct tobacco-specific surveys to complement the broader surveillance data systems. These include school-based tobacco surveys, surveys of adults, opinion leaders, health care providers, etc. These surveys help to demonstrate to the policy-makers the seriousness of the problem and the types of performance objectives that can be monitored.
- Periodic special statewide surveys of adults and young people have been conducted in several states in the USA to evaluate the exposure to tobacco and participation in major programme elements, particularly the media.

Indicators

Process indicators

The following indicators should be used to assess the extent as well as intensity of programme coverage:[18]

1. The level of interest among, and involvement of, community workers,

Box 8.2 The California tobacco control programme evaluation includes the following priorities and indicators[18]

Priority area	Core indicator
Counter pro-tobacco influence	• The proportion of communities with policies that control the extent of advertising outside retail stores or that of tobacco advertising outside retail stores in communities with or without a control policy • The proportion of schools that provide intensive prevention instructions for tobacco use using a curriculum that provides instruction on the negative physiological and social consequences of tobacco use, social influences on tobacco use, peer norms regarding tobacco use and refusal skills
Reduce exposure to second-hand smoke	• The extent of enforcement/compliance with enforcement of state/local smoke-free laws • The extent of compliance with the state law that prohibits the use of tobacco by all students, school staff, parents and visitors in schools • The proportion of homes with a smoker in the household who report their home is smoke-free • The extent of indoor facilities such as restaurants that have policies designating a proportion of or all the indoor areas as smoke-free. • The extent of outdoor recreational facilities, e.g. playgrounds, sports stadiums etc., that have policies designating a proportion of or all the outdoor areas as smoke-free
Reduce the availability of tobacco products	• The extent of compliance with state laws prohibiting the sale of tobacco to minors
Promote tobacco cessation services	• The extent of the availability and use of culturally and linguistically appropriate behaviour modification-based tobacco cessation services in the community • The number of schools that provide cessation support for students and all staff who use tobacco

2. The level of understanding of the staff and community about the various issues, e.g. regarding the factors that promote the spread of tobacco use,
3. The way in which tobacco use by team members is seen by them and others,
4. The level of active involvement of youth in the work,
5. The level of involvement of smokers in the work,
6. The interest and commitment of community groups,
7. The qualitative improvement in work of the community groups, and
8. The proportion of allocated resources which were utilized.

Outcome indicators[18]

These include:

1. The number of people who have quit tobacco use,
2. The number of people who have reduced consumption,
3. The number of people who express unhappiness about their own tobacco use,
4. The number of people who want to quit tobacco use,
5. The number of people who have quit tobacco use,
6. The number of people who see smoking as a sign of weakness,
7. The number of people who see smoking as a sign of being old-fashioned,
8. The number of people who see tobacco use as a sign of poor self-esteem,
9. Changes in the way tobacco is perceived,
10. Changes in the way the tobacco trade is perceived,
11. Changes among persons engaged in promoting tobacco,
12. Proportion of schools/workplaces/public places that have smoke-free policies,

13. The community's understanding and resistance to overt and covert tobacco promotions, and
14. Changes in the amount of publicly visible smoking.

Dissemination

The findings of the results of evaluation should be compiled as fact sheets and published in a timely manner as official press releases. This is important as it helps in gaining popular support for the programme. It is also helpful in getting feedback, which can, in turn, help in making changes.

8.4 GLOBAL MODELS FOR THE EVALUATION OF TOBACCO CONTROL PROGRAMMES

KEY MESSAGES

- It is important to constantly evaluate tobacco control programmes to ensure that only effective approaches are utilized.
- For an evaluation to be fruitful, it is essential that at least 10% of the total budget be earmarked for it.
- It is also vital that the evaluation reports are disseminated regularly and widely.

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9

What is Possible? A Vision for 2020 and Beyond

The first decade that denotes the dawn of a new century, especially one which also signals the birth of a new millennium, understandably inspires attempts to foretell the future and to identify the forces that are likely to shape it, in terms of threats and opportunities. Such an exercise was also undertaken in India by a wide range of policy-makers, media opinion-makers and celebrity citizens, as the year 2000 was unwrapped by history. In none of these forecasts was the threat of tobacco ever identified as a clear and present danger that would grow to endanger India's developmental efforts in the twenty-first century. Yet, that is the reality we have to contend with, as we envision the future. Tobacco control, therefore, becomes an imperative for urgent multisectoral action, as we resolve to remove the threats and enhance the opportunities for India's unimpeded development.

The tobacco epidemic: What could go wrong?

The gloomy predictions about the growing magnitude of tobacco's threat to India relate to a rise both in the proportion of deaths attributable to tobacco and in the absolute number of persons who consume tobacco. The World Health Organization (WHO) estimated that the proportion of deaths that result from tobacco-related diseases will rise in India, from

Table 9.1 Current and projected estimates of the number of smokers by country category and year (2000, 2020, 2050) for alternate scenarios of reduced and constant prevalence rates

Country category (by level of development)	Number of smokers (millions) at reduced prevalence (–1% per year)			Number of smokers (millions) at constant prevalence	
	2000	2020	2050	2020	2050
Developed	196.5	177.0	134.7	216.4	222.6
Developing	977.3	1055.2	1093.4	1290.1	1807.2
Economies in transition	108.0	90.1	60.4	110.2	99.8
World	1282.5	1385.1	1341.8	1693.5	2217.9

Source: ECOSOC Report 2002

1.4% of all deaths in 1990 to 13.3% of all deaths in 2020.[1]

The number of persons consuming tobacco is also likely to rise, according to the models presented in the 2002 report of the Economic and Social Council (ECOSOC) of the United Nations.[2] The ECOSOC report provides two scenarios, one in which the whole world will witness a 1% annual decrease in the prevalence of tobacco smoking, on par with the best performing states of the USA such as Oregon, Massachusetts and California, and another in which the current levels of prevalence will continue (Table 9.1). Even in the best case scenario, the absolute number of persons smoking tobacco will increase in developing countries such as India. This is because the population size will increase in these countries at a rate higher than the rate of decline in the prevalence of tobacco use.

The other reasons suggested in the ECOSOC report for the situation worsening in developing countries in the foreseeable future are: (i) a progressive rise in per capita income levels in developing countries (providing more disposable money to be spent on the tobacco addiction), and (ii) a steady shift in the production sites of tobacco to developing country locations (decreasing the local cost of tobacco products). In addition, there would be aggressive attempts by multinational tobacco companies to expand their sales in developing countries, to compensate for the fall in consumption in developed countries.

In India's case, the population is expected to grow by about 300 million between 2000 and 2020.[3] Most of the expansion will occur in the age group of 15–59 years. This is the age group which is most vulnerable to acquiring and continuing the tobacco addiction. Even if the prevalence of tobacco use falls by 1% per year, in the best case scenario of ECOSOC modelling, there is likely to be a net annual increase in the absolute number of persons consuming tobacco in India. Over the next half century, this would translate into a larger burden of deaths and disability arising from tobacco-related diseases. If the results of tobacco control are less satisfactory and the prevalence of tobacco either remains the same as at present or declines at a rate lower than 1% per year, the situation would be even more grim. If the domestic prices of tobacco products fall, the situation could further worsen.

What would happen if India's tobacco production remains the same or even increases? India's ability to export tobacco to the world market is diminishing, because tobacco consumption is declining in developed countries and developing country markets are being increasingly captured by transnational tobacco companies which operate from developed countries. In such a case, the surplus of tobacco produced in India will aggressively seek an increase in the internal market, in one form or the other. It is not accidental that the large-scale increase in the manufacture and sale of oral tobacco products in India coincided with the fall of India's tobacco exports to countries

belonging to the erstwhile Soviet bloc. If demand-reduction measures are not vigorously implemented, tobacco production continues unabated and tobacco exports decline, India would experience the worst case scenario of increasing numbers of people using tobacco and falling victim to its deadly effects over the next half century. In such a case, India will fall victim to its own agricultural success in tobacco.

Tobacco control: What can be set right?

The grim scenario of rising tobacco-related burdens need not be regarded as *fait accompli.* There is an alternate vision—one of effective tobacco control. There are several ways in which the menace of tobacco can be countered and diminished, if there is a political will and collective societal commitment to strengthen tobacco control in India. This chapter indicates how this can be accomplished, through the following steps.

1. Raise taxes on all tobacco products to increase prices and generate revenue for tobacco control

The case for this has been extensively argued in Sections 6.8, 7.1 and 8.1. The potential for augmenting tax revenue through tobacco tax increases is vast. In 2002, the excise tax revenue from tobacco was around Rs 5600 crore (Rs 56 billion). This was mostly derived from the taxes on cigarettes, which constitute about 14% of the Indian tobacco market. The *beedi* sector and oral tobacco products sector were virtually untouched. Even if one were to ignore the large-scale evasion of excise tax in the cigarette sector, the yield of Rs 5600 crore (Rs 56 billion) from that sector indicates the potential for additional revenue from the other tobacco sectors, if they are brought on par with the cigarette sector in the taxation scheme. Theoretically, the excise tax revenue could be raised to anywhere between Rs 20,000–30,000 crore (Rs 200–300 billion) per year if the entire tobacco sector was taxed at the rate of the cigarette segment. Even if this were considered impractical, it is not difficult to envisage a taxation scheme which imposes a higher level of taxes than at present on *beedis* and oral tobacco products and, thereby, generates an additional revenue of Rs 6000 crore (Rs 60 billion) per annum. This would also be possible if an earmarked tobacco cess was proposed that covers cigarettes in addition to other tobacco products. Even if a total ban were to be imposed on the manufacture and sale of oral tobacco products (*see below*), the taxation of smoked tobacco products (cigarettes and *beedis*) alone could produce an additional revenue of Rs 6000 crore (Rs 60 billion) through a combination of excise tax parity and an earmarked cess.

2. Spend the additional revenue on social sector initiatives benefiting the poor and on strengthening tobacco control programmes

Since the poor are the predominant consumers of tobacco in India (especially in non-cigarette forms such as *beedis* and chewed tobacco), it is sometimes argued that the increased tax burdens on tobacco products would adversely affect the poor. Apart from the fact that increased tobacco taxes would raise tobacco product prices and, thereby, reduce consumption of those harmful products (especially by the poor who are more price-sensitive than the rich), the best way to counter the argument is to spend a large fraction of the tobacco tax revenue on social sector programmes especially intended to benefit the poor.

About half of the extra money generated through new mechanisms (earmarked tax/cess and rationalization of the excise tax structure) could be utilized for funding programmes intended to increase the access of the poor to school education and primary health care, especially in rural areas and urban slum settings, where tobacco use is particularly high. Investment in education and alleviation of poverty will address the main social determinants of tobacco use and help vulnerable groups to escape the curse of

tobacco addiction. A part of this money could be utilized for providing education and vocational training to the children who are presently engaged in the production of *beedis* and oral tobacco products.

The remaining half of the extra revenue could be utilized specifically for strengthening tobacco control efforts: education of people through the mass media; specially targeted educational programmes, such as for children and adolescents, women's groups and workers; establishing and strengthening community-based and clinic-based tobacco cessation services; establishing tobacco product testing laboratories for regulatory purposes; providing support to civil society groups for undertaking activities related to tobacco control; encouraging research which will provide policy- and programme-relevant information that can help improve the effectiveness of tobacco control measures; establishing efficient tobacco surveillance mechanisms to monitor the patterns of tobacco use and their consequences; invigorating enforcement mechanisms; integrating tobacco control into other development-oriented programmes and creating national-, state- and district-level coordination mechanisms. A part of this money could also be utilized for undertaking operational research into the identification of appropriate mechanisms to facilitate the shift of tobacco farmers to alternative crops.

The creation of such a large fund for tobacco control will also enable the Central Government to provide adequate resources to the State Governments for undertaking effective tobacco control programmes. Without such resources to back up the programmes, the vision of tobacco control will remain confined to Central plans as the States will find it difficult to implement the programmes at the desired level. Infusion of funds into State-level programmes will encourage decentralized design and delivery of activities related to tobacco control, and ensure that the mission to combat tobacco becomes a truly national endeavour.

3. Impose a ban on oral tobacco products such as *gutka*

While imposition of an immediate ban on the manufacture and sale of all tobacco products may not be regarded as a feasible course of action for the government to undertake due to a variety of economic and political reasons, there is a strong case for imposing such a ban at least on oral tobacco products. These products are relatively new in the market but are rapidly converting many Indians into addicts and victims. This phenomenon is especially pronounced in the case of children and women, who are usually deterred from smoking by social taboos but can chew tobacco without such inhibitions. Children, in particular, can access these low-priced and easy-to-carry pouches without the fear of detection. The ban on smoking in public places does not extend to the use of chewed tobacco products. Some adults may, therefore, add the chewing habit to their smoking habit, to satisfy the constant craving for nicotine. High rates of oral cancer are likely to result at younger ages from such addictions becoming established in children and young adults. Even at present, India has the highest number of oral cancer cases in the world. A ban on oral tobacco products would, therefore, constitute a timely public health measure.

The danger of such a ban failing, due to smuggling and black market sale of oral tobacco products, is not high. Very few countries manufacture oral tobacco products and none on the scale that India does. Countries such as Australia have banned the manufacture and importation of oral tobacco products and have effectively prevented their entry through smuggling. In any case, India needs to counter the smuggling of all types of tobacco products and oral tobacco products too would be covered by that umbrella of vigilance against illicit trade.

The ethical and legal case for such a ban is also strong. The 'harm principle' and 'precautionary principle' which are invoked for protection of the environment are equally applicable for the protection of public health. While the whole

world is still struggling with the folly of having permitted smoked tobacco products to become established as legal commodities before their harm was adequately recognized, India can at least take steps to eliminate the most recent entrant into the market, on the grounds of manifest and potential threats to health. The provisions of the Prevention of Food Adulteration Act can be effectively invoked to impose such a ban.

The Supreme Court of India did not refute the legal basis for such a ban by the Central (Union) Government. While striking down the ban on *gutka* imposed by some State Governments, it opined that such a ban could be imposed only by the Central Government (*see* Section 6.3). It is now for the Central Government to act decisively in this matter.

4. Strengthen enforcement of existing laws and regulations

In 2003, India enacted one of the most comprehensive and powerful anti-tobacco laws in the world. Many of the provisions are in conformity with the Framework Convention on Tobacco Control (FCTC) and some are even stronger than those recommended in the FCTC. The rules related to some of the legal provisions have been notified and others are under preparation. The implementation of these rules, however, needs careful attention. If the rules are not adequately enforced, it would defeat the purpose of the legislation and erode the confidence of the people in the process of tobacco control.

The agencies involved in enforcement, at Central and State levels, should be strengthened quantitatively and qualitatively, so as to adequately address the needs of enforcement. This would mean investment in periodic training, establishment of easy reporting and early response systems to deal with violations, coordination mechanisms for concerted action by different enforcement agencies and monitoring methods for evaluating successes and failures.

Successful enforcement of anti-tobacco laws also requires community mobilization to increase people's awareness, enlist their support for the laws and involve them in reporting and 'watchdog' functions. This mandates a continuing educational effort as well as the formation of local community-level implementation and monitoring bodies which will act in tandem with the official enforcement agencies. The support of civil society groups is essential in this context.

5. Establish coordinating mechanisms at Central and State levels

The mandate of tobacco control involves multisectoral actions, to be undertaken at multiple levels (both within the government and in the broader society). This requires efficient planning, effective coordination and close monitoring. The need for national coordinating mechanisms has been recognized by the FCTC and has been amplified in the Indian context in Section 8.2. The agenda of comprehensive tobacco control in India will flounder if such mechanisms are not established for facilitating regular consultations among major stakeholders and concerted action by implementing agencies. The establishment of Central- and State-level inter-ministerial coordination committees and a National Coordinating Body (such as a National Commission for Tobacco Control) would be essential for this purpose.

6. Mobilize the people through mass education and community empowerment

All of the governmental measures for tobacco control will succeed only if there is a growing groundswell of popular support for the cause and increasing levels of community participation in the process of implementation.

It is essential, therefore, to increase the knowledge, motivation and skills of the people through mass education, and to create strong community-level coalitions to combat tobacco through government-supported civil society

action. The media too, in its varied forms, needs to be effectively enlisted as a partner in this effort. The energy and idealism of the youth also need to be channelled into well-designed anti-tobacco campaigns to make them powerful agents of social change.

7. Promote tobacco cessation through many avenues

If the objective is to reduce tobacco-related burdens by 2020, it is absolutely essential to promote tobacco cessation effectively and extensively, as most of the burdens of death and disease due to tobacco over the next two decades would arise from current consumers of tobacco. Success in tobacco cessation will yield early benefits in terms of reduced cardiovascular death rates, as the risk of a heart attack is substantially reduced (close to normal) by stopping smoking for 3 years. The cancer risk is lowered more slowly, but some gains would be made in this area too.

Clinic-based counselling services are useful, but they need to become available at the level of primary health centres, and support for cessation must become part of the routine general medical and health care practice. Community-based cessation facilities, which can be run by trained laypersons (especially civil society groups), should become the main model for cessation. The potential role of indigenous methods such as yoga and Indian systems of medicine should be scientifically evaluated. Research needs to identify cessation techniques which are especially appropriate for oral tobacco users and young persons, since most of the available global cessation research has focused on adult smokers.

8. Restrict the import of tobacco products into India

The rules of the World Trade Organization (WTO) require all member states of WTO to adopt non-discriminatory trade practices. Unfortunately, this is often interpreted to mean that foreign manufactured tobacco products have the right to freely enter and compete in the Indian market. India can, however, effectively restrict the entry of such products by setting stringent regulatory standards for domestic tobacco products, which the foreign tobacco products have to match. Such standards could be set in terms of: the content of toxic chemicals such as tar, nicotine, carbon monoxide, nitrosamines and polycyclic hydrocarbons in the products or their emissions; the nature of packaging and labelling, especially with respect to the size and content of the health warnings and the languages used to convey them; the frequency of regulatory testing and the disclosures required to be made by the industry. Even if some of the foreign manufacturers do comply with these regulations, their uniform application to both foreign and domestic tobacco products will ensure a strong and effective regulatory environment which will, in turn, influence domestic consumption.

9. Progressively reduce the area of land under tobacco cultivation in India

A reduction in the demand for tobacco, through reduced consumption, would lead to reduced production of tobacco, over time. However, the aggressive attempts of the tobacco industry to fully utilize the domestic production of tobacco to produce a greater variety of tobacco products as well as interventions by the government to provide distress subsidies to tobacco farmers may delay such a market response. It would be in the interest of tobacco control if the supply of tobacco is also reduced, alongside effective measures to reduce the demand. The land under tobacco cultivation may be progressively reduced, by encouraging farmers to switch to alternative crops. This would be a more enlightened policy for the government to follow rather than periodically providing bail-out subsidies to tobacco farmers. It is essential that steps are also taken to ensure that this reduction in domestic supply is not compensated by entry of tobacco from other countries. This can be done through a strong regulatory regime and well-designed import restrictions which will not attract the censure of the WTO.

What could be the impact of such actions?

The results of such interventions can only be evaluated through systematic observation and analysis. In the absence of widespread experience of such interventions being applied in the Indian context, a forecast of the results would be speculative. However, there is sufficient strength in the foundations of international experience to attempt to erect a model of the likely impact of a comprehensive tobacco control programme in India.

If all oral tobacco products are banned completely, a sizeable segment of tobacco consumption in India would be removed. Even if half of the oral tobacco consumers switch to smoking cigarettes or *beedis* to satisfy their craving for nicotine, such a ban is likely to have a major impact on women, children and adolescents. A reduction in the prevalence of tobacco consumption, to the extent of 10%–20%, is therefore likely to result from such a measure.

Fiscal measures, in which tax increases are used to raise the price of tobacco products and lower their consumption, are likely to result in a further reduction in the prevalence of tobacco use. Such measures will serve especially well to rescue the poor from a deadly addiction. The prevalence is, therefore, likely to fall by another 5%.

If other demand-reduction measures recommended by the FCTC (and mostly enacted by the Indian law) are effectively implemented, and educational efforts to enhance popular awareness of the ills associated with tobacco penetrate the mass consciousness, there would be an additional impact on tobacco use prevalence, which may be further reduced by 5%–10% over the next 5 years.

If cessation attempts are encouraged on a wide scale, utilizing methods which are identified to be cost-effective in the Indian context, further reductions in prevalence could occur, ranging between 5% and 10% over the next 5 years.

In 2002, the Subcommittee on Cessation, of the Interagency Committee on Smoking and Health in the United States, outlined 10 recommendations for reducing premature morbidity and mortality by helping millions of Americans to stop using tobacco.[4] The plan included both evidence-based, populationwide strategies designed to promote cessation (e.g. a national quitline network) and a Smokers' Health Fund to finance the programmes (through a $2 per pack excise tax increase).

The Subcommittee developed a US national tobacco cessation action plan that '(i) targets meaningful reductions in both tobacco use and its human and economic costs; (ii) relies on the strongest scientific evidence; (iii) addresses disparities in tobacco use; (iv) is national in scope and regional in application; (v) includes public–private partnerships; (vi) targets both the immediate and sustained effects of tobacco use; (vii) is comprehensive and integrated, with each component having an independent impact; (viii) is regularly evaluated; and (ix) is securely funded'. The plan was designed to reduce tobacco use by a minimum of 10% in its first year. This target was chosen because of its significant public health benefit and its feasibility. Deposing before the Subcommittee, F.J. Chaloupka estimated that the plan will prevent approximately 3 million premature deaths, through the avenues of smoking cessation and prevention of smoking initiation, as a result of the reduction in smoking prevalence achieved in the first year (F.J. Chaloupka, oral and written testimony to the Subcommittee on Cessation, 3 December 2002, and 20 December 2002).

There are several reasons why India can hope to achieve an even higher rate of reduction, through a combination of measures discussed in this chapter. Given the low level of tobacco control activities so far and the sparse resources allocated till now for that purpose, a comprehensive National Programme for Tobacco Control that is well resourced is likely to have a high impact. If higher taxes and price increases worked well in rich countries, they will work

even better in India, where price elasticity is higher. A ban on oral tobacco products too will have an immediate impact. The complete ban on advertising and the countrywide ban on smoking in public places in India go further than the US regulations.

It is also likely that the global efforts at tobacco control would be galvanized after the coming into force of the FCTC (around early 2005). The events that would occur subsequently across the world would considerably influence and possibly help the Indian efforts at tobacco control. In such a conducive global environment, the National Programme for Tobacco Control may accomplish even better results than suggested above.

India should aim to achieve at least a 30% reduction in the prevalence of tobacco consumption by 2020 and a 25% reduction in tobacco-related mortality by 2050. These targets are not modest, considering the large projected rise in tobacco-attributable mortality that has been forecast for India. However, a comprehensive tobacco control programme which combines high levels of passion, planning, performance and perseverance has a good chance of accomplishing these goals, or even bettering them.

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Tobacco control is an arena which requires the active participation of many players, in a collaborative mode. From several administrative departments involved at the governmental level, diverse civil society groups needed at the community level and varied technical expertise required from multiple professional groups, to a host of bilateral and international partners to engage, the design and delivery of the national programme for tobacco control requires extensive networking among the stakeholders and carefully calibrated coordination mechanisms. Specific recommendations for individual stakeholders have been profiled in the following pages. These would have to be read in conjunction with the programme-related recommendations made in Chapters 7 and 8 (especially Sections 7.7, 7.8, 7.9, 7.11 and 8.3).

10.1

Recommendations for the Central Government

As mandated by Parliament of India and as directed by the Supreme Court of India, the Central (Union) Government has the responsibility for initiating legislative and administrative measures for tobacco control at the national level. While the Ministry of Health and Family Welfare must function as the focal point of a national programme, tobacco control requires multisectoral action to be undertaken by several ministries. It is recommended that the Central Government

1. Establish a Secretary-level Inter-ministerial Coordination Committee for developing, implementing and monitoring a National Programme for Tobacco Control (NPTC), which integrates demand-reduction and supply-reduction strategies (as recommended by the WHO Framework Convention on Tobacco Control [FCTC]), and channels them into a multisectoral implementation pathway (Box 10.1).
2. Establish a National Regulatory Authority for regulating the constituents and emissions of tobacco products.
3. Establish and help maintain independent National Laboratories for Tobacco Product Testing, which are free from the influence of the tobacco industry.
4. Effectively enforce existing laws, evolve new laws as may be necessary (such as for imposing a ban and penalties on cross-border advertising) and undertake additional administrative action as may be needed (such as imposition of a nationwide ban on *gutka* under the Prevention of Food Adulteration [PFA] Act).
5. Pursue a policy of progressively increasing the taxation on all tobacco products to reduce tobacco consumption through price mechanisms.
6. Extend the ambit of tobacco product taxation, especially the excise tax, to hitherto untaxed or lightly taxed products such as *beedis* and chewed tobacco products, and bring their taxes on par with those on cigarettes, to reduce the consumption of such non-cigarette tobacco products through price mechanisms.
7. Discontinue direct and indirect subsidies and financial incentives to tobacco farming and the tobacco industry.
8. Levy an earmarked tobacco cess, whose revenue would be utilized for strengthening health programmes in the country, especially in the area of tobacco control.
9. Establish partnerships with civil society organizations and the private sector (other than the tobacco industry and its affiliates) for advancing the implementation of the NPTC.

Box 10.1 Activities to be included in the National Programme for Tobacco Control

- Effective enforcement of a comprehensive ban on tobacco product advertising and promotion
- Curbs on cross-border advertising
- Strict ban on the sale of tobacco products to and by minors
- Rigorous enforcement of the ban on smoking in public places
- Anti-tobacco health education to be provided in schools and colleges though curricular and co-curricular activities
- Development and implementation of a dedicated media plan to provide health education related to tobacco avoidance
- Effective counter-mechanisms to tackle the influence of the tobacco industry
- Higher taxes on tobacco products, across the board, to protect vulnerable groups of society
- Effective health warnings on the packaging and labelling of tobacco products, to adequately inform consumers
- Setting up a National Regulatory Authority to administer tobacco product regulation
- Providing facilities and resources for promoting tobacco cessation
- Effective controls on illicit trade of tobacco products (smuggling)
- Stringent penal provisions to deal with violators of the law
- Identification and in-depth market analyses of alternative crops for tobacco

10. Establish a National Coordinating Body, with participation of relevant stakeholder groups but excluding the tobacco industry and its affiliates, to guide and monitor the implementation of the NPTC.
11. Integrate elements of the NPTC into other national health programmes and developmental programmes.
12. Establish and support a nationwide surveillance system for monitoring the patterns of tobacco product consumption among different population groups and the trends in major tobacco-related diseases, along with systems for monitoring the determinants of tobacco consumption (from community health beliefs to tobacco industry behaviour).

10.2

Recommendations for State Governments

The delivery of health services is mainly the responsibility of the State (provincial) Governments, as per the allocation of powers and duties under the federal structure of the Indian Constitution. No health programme can hope to succeed without the active participation and leadership of the State Governments. The multisectoral nature of the tobacco control programme must be recognized by these governments too, as in the case of the Centre. It is recommended that the State Governments

1. Establish a State-level Inter-ministerial Coordination Committee of Secretaries, representing relevant ministries, to guide and monitor the implementation of activities envisaged under the NPTC, in each State/ Union Territory.
2. Establish district-level Coordination Committees, with representation of multiple stakeholder groups (excluding the tobacco industry and its affiliates), for guiding and monitoring the implementation of activities envisaged under the NPTC, at the State level.
3. Integrate programme-related activities into the regular functioning of primary, secondary and tertiary health care services in the State, as relevant.
4. Establish partnerships with civil society organizations and the private sector (excluding the tobacco industry and its affiliates) for advancing the implementation of the activities proposed under the NPTC.
5. Adopt fiscal policies (tax-linked financial disincentives, and discontinuation of direct and indirect subsidies) that will reduce tobacco consumption.
6. Empower local self-government bodies (*panchayats*) to effectively undertake tobacco control programmes in rural areas.

10.3

Recommendations for Civil Society

Sections of civil society who are committed to the goals of tobacco control represent the bulwark of the anti-tobacco coalition in any country. In India too, the civil society has played a major role so far in advancing the agenda of tobacco control and would be a key contributor to the success of the NPTC in the future. It is recommended that civil society should

1. Increase public awareness about the disease and environmental consequences of tobacco use, using all possible channels of communication for mass education as well as for influencing target groups (such as children and women's groups).
2. Promote tobacco cessation through educational efforts to motivate tobacco smokers to quit and create community-based cessation facilities to assist them in doing so.
3. Pursue informed advocacy with policy-makers for advancing tobacco control policies and strengthening tobacco control programmes.
4. Perform a 'watchdog' function to monitor the implementation of tobacco control laws (such as bans on advertising, smoking in public places and sale to minors). Violations should be reported to the concerned authorities and followed up to check for the actions taken.
5. Monitor the marketing and promotion tactics of the tobacco industry and counter them in every legally possible manner.
6. Demand withdrawal of support for the tobacco industry by the government, public financing institutions, insurance companies, public sector corporations and, whenever possible, responsible sections of the private banking and corporate sectors.
7. Not accept financial or other forms of support offered by the tobacco industry to any civil society organization and oppose such support being received by universities, research institutes and other academic institutions.
8. Work in a unified, organized and coordinated manner to advance tobacco control in the country.
9. Interact and liaise with international counterparts to understand the global strategies of tobacco companies to expose the tactics employed by them in the country and advance tobacco control globally.

10.4

Recommendations for International Organizations

India, along with China, represents the epicentre of the tobacco epidemic in the twenty-first century—both in terms of the largest numbers of people at risk and the highest rate of rise of tobacco-related deaths and disability. The global battle against tobacco cannot even be considered to have truly begun, let alone won, unless well-resourced national tobacco control programmes start to operate in India and China. In recognition of this reality, international organizations should extend technical and financial assistance to a National Programme for Tobacco Control (NPTC) in India. It is recommended that

1. WHO extend technical and financial assistance to help the Government of India to develop and implement a comprehensive NPTC, through specifically committed budgetary allocations.
2. International lending institutions such as the World Bank and the Asian Development Bank extend financial assistance to prioritized components of the NPTC for implementation through Central- and State-level projects.
3. Multilateral organizations such as the European Union provide financial and technical assistance to the Government of India for implementing the NPTC.
4. The Conference of Parties (COP), to be established under the FCTC, guide its operations, establish a multilateral Global Fund for Tobacco Control, to provide financial assistance to developing countries such as India to enable them to fulfil the mandate of the FCTC.
5. The Food and Agriculture Organization (FAO) provide technical and financial assistance to the Government of India for enabling tobacco farmers to shift to alternative crops.
6. Other UN organizations such as the UNDP, UNESCO, UNESCAP and UNEP integrate elements of tobacco control into the programmes funded by them.
7. The World Trade Organization (WTO) upholds actions that accord precedence to the public health objectives of tobacco control over trade practices.

10.5

Recommendations for Health Professionals

Health professionals are a critical resource for advancing the agenda of tobacco control, by actions which empower the community, catalyse policy and promote technical assistance to other stakeholder groups. They contribute the principal agency through which information on the health consequences of tobacco is communicated to people as well as policy-makers. They also provide direct services for tobacco cessation, through counselling and other forms of therapy. Recognizing the importance of their role, it is recommended that health professionals

1. Must strongly advocate tobacco cessation among colleagues and provide special cessation services to them, since tobacco use by health professionals has a negative influence on the community.
2. Keep medical conferences and other events organized by associations of health professionals completely tobacco-free and avoid sponsorship of any kind from tobacco companies or their affiliates.
3. Ensure that health facilities are completely tobacco-free, over and beyond what is required by the law.
4. Evolve guidelines and specific recommendations for advancing tobacco control and advocate for implementing these recommendations with the government and civil society.
5. Utilize all opportunities for patient contact to enquire about tobacco use and advise about tobacco cessation, as may be required.
6. Provide broad-based cessation services which include counselling for behaviour change for all tobacco users, and pharmacotherapy, where essential.
7. Partner civil society organizations and governmental agencies in promoting community awareness on tobacco-related issues.

10.6

Recommendations for Research Scientists

While there is adequate information to commence action for tobacco control in India, research is needed to better inform policies and strengthen programmes. Such research must not only provide accurate and regularly updated information on the prevalence of tobacco use and its health consequences but also clearly delineate the dimensions of the economic and environmental damage caused by tobacco. Research must also identify multiple determinants of tobacco use in diverse population groups, assess the impact of interventions to reduce tobacco use and measure the cost-effectiveness of different programme components. It is recommended that research scientists

1. Develop a standardized, population-based surveillance mechanism, with India-specific tools, to generate reliable data for assessing tobacco use patterns and related health consequences in India.
2. Evolve mechanisms to obtain more precise estimates of morbidity and mortality attributable to tobacco use in India.
3. Identify the economic and sociocultural determinants of tobacco use in different demographic groups in India.
4. Evaluate the impact of policy interventions on reducing tobacco consumption in India.
5. Assess the economic and environmental consequences of tobacco production and consumption in India.
6. Design, implement and evaluate community interventions intended to prevent the primary uptake of tobacco, especially by the youth.
7. Assess the cost-effectiveness of community-based and clinic-based interventions to promote cessation among adults and the youth.
8. Periodically evaluate the performance of the NPTC and measure the cost-effectiveness of various programme components.

10.7

Recommendations for Multisectoral Action

The implementation of the NPTC requires well-coordinated multisectoral action to ensure synchrony of effort and synergy of effect among various stakeholder groups responsible for different activities. There is a need to stimulate, strengthen and sustain a variety of partnerships (public–public; public–private and private–private) as well as to facilitate multiple functions ranging from advocacy to regulation. To enable such coordination, it is recommended that

1. A National Coordinating Body (such as a National Commission for Tobacco Control) be created, through an initiative of the Union Ministry of Health and Family Welfare. This body should have representatives of key stakeholder groups (excluding the tobacco industry and its affiliates). It should help to catalyse policy, create partnerships, facilitate implementation at multiple levels, monitor performance of NPTC-related activities and provide advice to Central and State Governments on the methods and means by which programme implementation can be strengthened. Such a body should ideally have the status of a statutory body but should remain fully autonomous. Its establishment and functioning should be supported by specified financial allocation from the budget of the Health Ministry. This body should also be connected to the Central- and State-level Inter-ministerial Coordination Committees for enabling a regular exchange of information and advice on the functioning of the NPTC.
2. A broad-based platform for periodic consultation among the stakeholder groups may also include an Annual National Consultation on Tobacco Control.